

**M35**

# AT Commands Manual

**GSM/GPRS Module Series**

Rev. M35\_AT\_Commands\_Manual\_V1.0

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## About the Document

### History

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# 1 Introduction

## 1.1. Scope of the Document

This document presents the AT Commands Set for Quectel cellular engine M35.

## 1.2. AT Command Syntax

The “AT” or “at” prefix must be set at the beginning of each command line. To terminate a command line enter <CR>. Commands are usually followed by a response that includes “<CR><LF><response><CR><LF>”. Throughout this document, only the responses are presented, “<CR><LF>” are omitted intentionally.

The AT Commands Set implemented by M85 is a combination of GSM07.05, GSM07.07 and ITU-T recommendation V.25ter and the AT Commands developed by Quectel.

All these AT Commands can be split into three categories syntactically: “**basic**”, “**S parameter**”, and “**extended**”. They are listed as follows:

- **Basic syntax**

These AT Commands have the format of “AT<x><n>”, or “AT&<x><n>”, where “<x>” is the command, and “<n>” is/are the argument(s) for that command. An example of this is “ATE<n>”, which tells the DCE whether received characters should be echoed back to the DTE according to the value of “<n>”. “<n>” is optional and a default will be used if it is missing.

- **S parameter syntax**

These AT Commands have the format of “ATS<n>=<m>”, where “<n>” is the index of the **S** register to set, and “<m>” is the value to assign to it. “<m>” is optional; if it is missing, then a default value is assigned.

- **Extended syntax**

These commands can be operated in several modes, as following table:

**Table 1: Types of AT Commands and Responses**

<b>Test Command</b>	AT+<x>=?	This command returns the list of parameters and value ranges set by the corresponding Write Command or internal processes.
<b>Read Command</b>	AT+<x>?	This command returns the currently set value of the parameter or parameters.
<b>Write Command</b>	AT+<x>=<...>	This command sets the user-definable parameter values.
<b>Execution Command</b>	AT+<x>	This command reads non-variable parameters affected by internal processes in the GSM engine

### 1.2.1. Combining AT Commands on the Same Command Line

You can enter several AT Commands on the same line. In this case, you do not need to type the “AT” or “at” prefix before every command. Instead, you only need type “AT” or “at” at the beginning of the command line. Please note that use a semicolon as command delimiter.

The command line buffer can accept a maximum of 256 characters. If the input characters exceeded the maximum then no command will be executed and TA will return “ERROR”.

### 1.2.2. Entering Successive AT Commands on Separate Lines

When you need to enter a series of AT Commands on separate lines, please note that you need to wait the final response (for example OK, CME error, CMS error) of the last AT command you entered before you enter the next AT command.

## 1.3. Supported Character Sets

The M35 AT Command interface defaults to the **IRA** character set. The M35 supports the following character sets:

- GSM
- UCS2
- HEX
- IRA
- PCCP437
- 8859\_1

The character set can be configured and interrogated using the “**AT+CSCS**” command (GSM 07.07). The character set is defined in GSM specification 07.05. The character set affects transmission and reception of SMS and SMS Cell Broadcast Messages, the entry and display of phone book entries text field and SIM Application Toolkit alpha strings.

## 1.4. Flow Control

Flow control is very important for correct communication between the GSM engine and DTE. For example, in the case such as a data or FAX call, the sending device is transferring data faster than the receiving side is ready to accept. When the receiving buffer reaches its capacity, the receiving device should be capable to cause the sending device to pause until it catches up.

There are basically two approaches to achieve data flow control: software flow control and hardware flow control. M35 supports both two kinds of flow control.

In Multiplex mode, it is recommended to use the hardware flow control.

The default flow control approach of M35 is closed.

### 1.4.1. Software Flow Control (XON/XOFF Flow Control)

Software flow control sends different characters to stop (XOFF, decimal 19) and resume (XON, decimal 17) data flow. It is quite useful in some applications that only use three wires on the serial interface.

The default flow control approach of M35 is closed, to enable software flow control in the DTE interface and within GSM engine, type the following AT command:

**AT+IFC=1, 1<CR>**

This setting is stored volatile, for use after restart, **AT+IFC=1, 1<CR>** should be stored to the user profile with **AT&W<CR>**.

Ensure that any communication software package (e.g. ProComm Plus, Hyper Terminal or WinFax Pro) uses software flow control.

#### NOTE

Software Flow Control should not be used for data calls where binary data will be transmitted or received (e.g. TCP/IP), because the DTE interface may interpret binary data as flow control characters.

### 1.4.2. Hardware Flow Control (RTS/CTS Flow Control)

The default flow control approach of M3 is closed, to enable hardware flow control (RTS/CTS flow control) in the DTE interface and within GSM engine, type the following AT command:

**AT+IFC=2, 2<CR>**.

This setting is stored volatile, for use after restart, **AT+IFC=2, 2<CR>** should be stored to the user profile with **AT&W<CR>**.

Hardware flow control achieves the data flow control by controlling the RTS/CTS line. When the data transfer should be suspended, the CTS line is set inactive until the transfer from the receiving buffer has completed. When the receiving buffer is ok to receive more data, CTS goes active once again.

To achieve hardware flow control, ensure that the RTS/CTS lines are present on your application platform.

## 1.5. Unsolicited Result Code

A URC is a report message sent from the ME to the TE. An unsolicited result code can either be delivered automatically when an event occurs, to reflect change in system state or as a result of a query the ME received before, often due to occurrences of errors in executing the queries. However, a URC is not issued as a direct response to an executed AT command. AT commands have their own implementations to validate inputs such as “**OK**” or “**ERROR**”.

Typical URCs may be information about incoming calls, received SMS, changing temperature, status of the battery etc. A summary of URCs is listed in Appendix A.

When sending a URC, the ME activates its Ring Interrupt (Logic “1”), i.e. the line goes active low for a few milliseconds. If an event which delivers a URC coincides with the execution of an AT command, the URC will be output after command execution has completed.

## 2 General Commands

### 2.1. ATI Display Product Identification Information

#### ATI Display Product Identification Information

Execution Command

**ATI**

Response

TA issues product information text

**Quectel\_Ltd**

**Quectel\_M35**

**Revision: M85EARxxAxxW64**

**OK**

Reference

**V.25ter**

#### Example

**ATI**

**Quectel\_Ltd**

**Quectel\_M35**

**Revision: M85EAR21A01W64**

**OK**

### 2.2. AT+GMI Request Manufacture Identification

#### AT+GMI Request Manufacture Identification

Test Command

**AT+GMI=?**

Response

**OK**

Execution Command

**AT+GMI**

Response

TA reports one or more lines of information text which permit the user to identify the manufacturer.

**Quectel\_Ltd**

	<b>Quectel_M35</b> <b>Revision: MTK 1132</b>  <b>OK</b>
Reference <b>V.25ter</b>	

### 2.3. AT+GMM Request TA Model Identification

#### AT+GMM Request TA Model Identification

Test Command <b>AT+GMM=?</b>	Response <b>OK</b>
Execution Command <b>AT+GMM</b>	Response TA returns a product model identification text. <b>Quectel_M35</b>  <b>OK</b>
Reference <b>V.25ter</b>	

### 2.4. AT+GMR Request TA Revision Identification of Software Release

#### AT+GMR Request TA Revision Identification of Software Release

Test Command <b>AT+GMR=?</b>	Response <b>OK</b>
Execution Command <b>AT+GMR</b>	Response TA reports one or more lines of information text which permit the user to identify the revision of software release. <b>Revision: &lt;revision&gt;</b>  <b>OK</b>
Reference <b>V.25ter</b>	

#### Parameter

**<revision>** Revision of software release



## Example

**AT+GMR**

Revision: M85EAR21A01W64

OK

## 2.5. AT+GOI Request Global Object Identification

### AT+GOI Request Global Object Identification

Test Command <b>AT+GOI=?</b>	Response <b>OK</b>
Execution Command <b>AT+GOI</b>	Response TA reports one or more lines of information text which permit the user to identify the device, based on the ISO system for registering unique object identifiers. <b>&lt;Object Id&gt;</b>  <b>OK</b>
Reference <b>V.25ter</b>	

### Parameter

**<Object Id>** Identifier of device type

#### NOTE

See X.208, 209 for the format of <Object Id>. For example, in M35 wireless module, string "M35" is displayed.

## 2.6. AT+CGMI Request Manufacturer Identification

### AT+CGMI Request Manufacture Identification

Test Command <b>AT+CGMI=?</b>	Response <b>OK</b>
Execution Command	Response

<b>AT+CGMI</b>	TA returns manufacturer identification text. <b>Quectel_Ltd</b> <b>Quectel_M35</b> <b>Revision: MTK 1132</b>  <b>OK</b>
Reference <b>GSM 07.07</b>	

## 2.7. AT+CGMM Request Model Identification

<b>AT+CGMM Request Model Identification</b>	
Test Command <b>AT+CGMM=?</b>	Response <b>OK</b>
Execution Command <b>AT+CGMM</b>	Response TA returns product model identification text. <b>&lt;model&gt;</b>  <b>OK</b>
Reference <b>GSM 07.07</b>	

### Parameter

**<model>** Product model identification text

## 2.8. AT+CGMR Request TA Revision Identification of Software Release

<b>AT+CGMR Request TA Revision Identification of Software Release</b>	
Test Command <b>AT+CGMR=?</b>	Response <b>OK</b>
Execution Command <b>AT+CGMR</b>	Response TA returns product software version identification text. <b>Revision: &lt;revision&gt;</b>  <b>OK</b>
Reference <b>GSM 07.07</b>	

**Parameter**

<revision> Product software version identification text

**2.9. AT+GSN Request International Mobile Equipment Identity (IMEI)**

**AT+GSN Request International Mobile Equipment Identity (IMEI)**

Test Command <b>AT+GSN=?</b>	Response <b>OK</b>
Execution Command <b>AT+GSN</b>	Response TA reports the IMEI (International Mobile Equipment Identity) number in information text which permit the user to identify the individual ME device. <b>&lt;sn&gt;</b>  <b>OK</b>
Reference <b>V.25ter</b>	

**Parameter**

<sn> IMEI of the telephone

**NOTE**

The serial number (IMEI) is varied with the individual ME device.

**2.10. AT+CGSN Request Product Serial Number Identification**

**AT+CGSN Request Product Serial Number Identification (Identical with +GSN)**

Test Command <b>AT+CGSN=?</b>	Response <b>OK</b>
Execution Command <b>AT+CGSN</b>	Response <b>&lt;sn&gt;</b>  <b>OK</b>

Reference  
GSM 07.07

**NOTE**

See **AT+GSN**.

## 2.11. AT&F Set all Current Parameters to Manufacturer Defaults

### AT&F Set all Current Parameters to Manufacturer Defaults

Execution Command <b>AT&amp;F[&lt;value&gt;]</b>	Response TA sets all current parameters to the manufacturer defined profile. <b>OK</b>
Reference <b>V.25ter</b>	

#### Parameter

<value>     0     Set all TA parameters to manufacturer defaults

## 2.12. AT&V Display Current Configuration

### AT&V Display Current Configuration

Execution Command <b>AT&amp;V[&lt;n&gt;]</b>	Response TA returns the current parameter setting. <b>ACTIVE PROFILE</b> <current configurations text> <b>OK</b>
Reference <b>V.25ter</b>	

#### Parameter

<n>     0     Profile number

**Table 2: AT&V Display Current Configuration List**

**AT&V or AT&V0**

AT&V  
ACTIVE PROFILE  
E: 1  
Q: 0  
V: 1  
X: 4  
S0: 0  
S2: 43  
S3: 13  
S4: 10  
S5: 8  
S6: 2  
S7: 60  
S8: 2  
S10: 15  
+CR: 0  
+FCLASS: 0  
+CMGF: 0  
+CSDH: 0  
+ILRR: 0  
+CMEE: 1  
+CBST: 7,0,1  
+IFC: 0,0  
+ICF: 3,3  
+CNMI: 2,1,0,0,0  
+CSCS: "GSM"  
+IPR: 0  
&C: 1  
&D: 0  
+CSTA: 129  
+CRLP: 61,61,128,6,0,3  
+CCWE: 0  
+QSIMSTAT: 0  
+CMUX: -1  
+CCUG: 0,0,0  
+CLIP: 0  
+COLP: 0  
+CCWA: 0  
+CAOC: 1  
+CLIR: 0  
+CUSD: 0

```
+CREG: 0
+QSIMDET: 0,0
+QMIC: 4,9,8
+QECHO(NORMAL_AUDIO): 253,96,16388,57351,0
+QECHO(Earphone_AUDIO): 253,0,10756,57351,1
+QECHO(LoudSpk_AUDIO): 224,96,5256,57351,2
+QSIDET(NORMAL_AUDIO): 80
+QSIDET(HEADSET_AUDIO): 144
+QCLIP: 0
+QCOLP: 0
+CSNS: 0
```

OK

## 2.13. AT&W Store Current Parameter to User Defined Profile

### AT&W Store Current Parameter to User Defined Profile

Execution Command <b>AT&amp;W[&lt;n&gt;]</b>	Response TA stores the current parameter setting in the user defined profile. <b>OK</b>
Reference <b>V.25ter</b>	

#### Parameter

<n>      0      Profile number to store to

#### NOTE

The profile defined by user is stored in non volatile memory.

## 2.14. ATQ Set Result Code Presentation Mode

### ATQ Set Result Code Presentation Mode

Execution Command <b>ATQ&lt;n&gt;</b>	Response This parameter setting determines whether or not the TA
------------------------------------------	---------------------------------------------------------------------

	<p>transmits any result code to the TE. Information text transmitted in response is not affected by this setting.</p> <p>If <b>&lt;n&gt;=0:</b> <b>OK</b></p> <p>If <b>&lt;n&gt;=1:</b> (none)</p>
Reference V.25ter	

### Parameter

<b>&lt;n&gt;</b>	<u>0</u>	TA transmits result code
	1	Result codes are suppressed and not transmitted

## 2.15. ATV TA Response Format

### ATV TA Response Format

<p>Execution Command <b>ATV&lt;value&gt;</b></p>	<p>Response</p> <p>This parameter setting determines the contents of the header and trailer transmitted with result codes and information responses.</p> <p>When <b>&lt;value&gt;=0</b> <b>0</b></p> <p>When <b>&lt;value&gt;=1</b> <b>OK</b></p>
Reference V.25ter	

### Parameter

<b>&lt;value&gt;</b>	0	Information response: <b>&lt;text&gt;&lt;CR&gt;&lt;LF&gt;</b> Short result code format: <b>&lt;numeric code&gt;&lt;CR&gt;</b>
	<u>1</u>	Information response: <b>&lt;CR&gt;&lt;LF&gt;&lt;text&gt;&lt;CR&gt;&lt;LF&gt;</b> Long result code format: <b>&lt;CR&gt;&lt;LF&gt;&lt;verbose code&gt;&lt;CR&gt;&lt;LF&gt;</b>

#### NOTE

The result codes, their numeric equivalents and brief descriptions of the use of each are listed in the following table.

### Example

```

ATV1 // Set <value>=1
OK
AT+CSQ
+CSQ: 30,0

OK // When <value>=1 result code is OK
ATV0 // Set <value>=0
0
AT+CSQ
+CSQ: 30,0
0 // When <value>=0 result code is 0

```

**Table 3: ATV0&ATV1 Result Codes Numeric Equivalents and Brief Descriptions**

ATV1	ATV0	Description
OK	0	Acknowledges execution of a command
CONNECT	1	A connection has been established; the DCE is moving from command state to online data state
RING	2	The DCE has detected an incoming call signal from network
NO CARRIER	3	The connection has been terminated or the attempt to establish a connection failed
ERROR	4	Command not recognized, command line maximum length exceeded, parameter value invalid, or other problem with processing the command line
NO DIALTONE	6	No dial tone detected
BUSY	7	Engaged (busy) signal detected
NO ANSWER	8	"@" (Wait for Quiet Answer) dial modifier was used, but remote ringing followed by five seconds of silence was not detected before expiration of the connection timer (S7)
PROCEEDING	9	An AT command is being processed
CONNECT <text>	Manufacturer-specific	Same as <b>CONNECT</b> , but includes manufacturer-specific text that may specify DTE speed, line speed, error control, data compression, or other status



## 2.16. ATX Set CONNECT Result Code Format and Monitor Call Progress

### ATX Set CONNECT Result Code Format and Monitor Call Progress

Execution Command <b>ATX&lt;value&gt;</b>	Response This parameter setting determines whether or not the TA detected the presence of dial tone and busy signal and whether or not TA transmits particular result codes. <b>OK</b>
Reference <b>V.25ter</b>	

#### Parameter

<b>&lt;value&gt;</b>	<b>0</b>	<b>CONNECT</b> result code only returned, dial tone and busy detection are both disabled
	<b>1</b>	<b>CONNECT&lt;text&gt;</b> result code only returned, dial tone and busy detection are both disabled
	<b>2</b>	<b>CONNECT&lt;text&gt;</b> result code returned, dial tone detection is enabled, busy detection is disabled
	<b>3</b>	<b>CONNECT&lt;text&gt;</b> result code returned, dial tone detection is disabled, busy detection is enabled
	<b>4</b>	<b>CONNECT&lt;text&gt;</b> result code returned, dial tone and busy detection are both enabled

## 2.17. ATZ Set all Current Parameters to User Defined Profile

### ATZ Set all Current Parameters to User Defined Profile

Execution Command <b>ATZ[&lt;value&gt;]</b>	Response TA sets all current parameters to the user defined profile. <b>OK</b>
Reference <b>V.25ter</b>	

#### Parameter

<b>&lt;value&gt;</b>	<b>0</b>	Reset to profile number 0
----------------------	----------	---------------------------

**NOTES**

1. Profile defined by user is stored in non volatile memory.
2. If the user profile is invalid, it will default to the factory default profile.
3. Any additional commands on the same command line are ignored.

## 2.18. AT+CFUN Set Phone Functionality

### AT+CFUN Set Phone Functionality

Test Command <b>AT+CFUN=?</b>	Response <b>+CFUN:</b> (list of supported <b>&lt;fun&gt;</b> s), (list of supported <b>&lt;rst&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CFUN?</b>	Response <b>+CFUN:</b> <b>&lt;fun&gt;</b>  <b>OK</b>
Write Command <b>AT+CFUN=&lt;fun&gt;[,&lt;rst&gt;]</b>	Response <b>OK</b>  If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference <b>GSM 07.07</b>	

#### Parameter

<b>&lt;fun&gt;</b>	0	Minimum functionality
	<u>1</u>	Full functionality (Default)
	4	Disable phone both transmit and receive RF circuits
<b>&lt;rst&gt;</b>	<u>0</u>	Do not reset the ME before setting it to <b>&lt;fun&gt;</b> power level This is default when <b>&lt;rst&gt;</b> is not given
	1	Reset the ME before setting it to <b>&lt;fun&gt;</b> power level

#### Example

```
AT+CFUN=0 // Switch phone to minimum functionality
+CPIN: NOT READY
OK
```

```

AT+COPS?
+COPS: 0 // No operator is registered

OK
AT+CPIN?
+CME ERROR: 13 // SIM failure
AT+CFUN=1 // Switch phone to full functionality
OK

+CPIN: SIM PIN
AT+CPIN=1234
+CPIN: READY

OK

Call Ready
AT+CPIN?
+CPIN: READY

OK
AT+COPS?
+COPS: 0,0,"CHINA MOBILE" // Operator is registered

OK
    
```

## 2.19. AT+QPOWD Power off

### AT+QPOWD Power off

Write Command	Response
AT+QPOWD=<n>	When <n>=0 <b>OK</b> When <n>=1 <b>NORMAL POWER DOWN</b>
Reference	

#### Parameter

<n>	0	1
	Urgent power off ( Do not send out URC "NORMAL POWER DOWN")	Normal power off (Send out URC "NORMAL POWER DOWN")

### Example

```

AT+QPOWD=0
OK // Urgent power off, returned OK
AT+QPOWD=1
NORMAL POWER DOWN // Normal power off, send out URC"NORMAL
POWER DOWN"
    
```

## 2.20. AT+CMEE Report Mobile Equipment Error

### AT+CMEE Report Mobile Equipment Error

Test Command <b>AT+CMEE=?</b>	Response <b>+CMEE:</b> (list of supported <n>s)  <b>OK</b>
Read Command <b>AT+CMEE?</b>	Response <b>+CMEE:</b> <n>  <b>OK</b>
Write Command <b>AT+CMEE=[&lt;n&gt;]</b>	Response TA disables or enables the use of result code <b>+CME ERROR:</b> <err> as an indication of an error related to the functionality of the ME.  <b>OK</b>
Reference GSM 07.07	

### Parameter

<n>	0	Disable result code
	<u>1</u>	Enable result code and use numeric values
	2	Enable result code and use verbose values

### Example

```

AT+CMEE=0 // Disable result code
OK
AT+CPIN=1234
ERROR // Only "ERROR" will be displayed
AT+CMEE=1 // Enable error result code with numeric values
OK
AT+CPIN=1234
    
```

```
+CME ERROR: 10
AT+CMEE=2 // Enable error result code with verbose (string)
values
OK
AT+CPIN=1234
+CME ERROR: SIM not inserted
```

## 2.21. AT+CSCS Select TE Character Set

### AT+CSCS Select TE Character Set

Test Command	Response
AT+CSCS=?	+CSCS: (list of supported <chset>s)  OK
Read Command AT+CSCS?	Response +CSCS: <chset>  OK
Write Command AT+CSCS=<chset>	Response Set character set <chset> which is used by the TE. The TA can then convert character strings correctly between the TE and ME character sets.  OK
Reference GSM 07.07	

### Parameter

<chset>	"GSM"	GSM default alphabet
	"HEX"	Character strings consist only of hexadecimal numbers from 00 to FF
	"IRA"	International reference alphabet
	"PCCP437"	PC character set Code
	"UCS2"	UCS2 alphabet
	"8859-1"	ISO 8859 Latin 1 character set

### Example

```
AT+CSCS? // Query the current character set
+CSCS: "GSM"
OK
```

```

AT+CSCS="UCS2" // Set the character set to "UCS2"
OK
AT+CSCS?
+CSCS: "UCS2"

OK
    
```

## 2.22. AT+GCAP Request Complete TA Capabilities List

### AT+GCAP Request Complete TA Capabilities List

Test Command <b>AT+GCAP=?</b>	Response <b>OK</b>
Execution Command <b>AT+GCAP</b>	Response TA reports a list of additional capabilities. <b>+GCAP: &lt;name&gt;s</b>  <b>OK</b>
Reference V.25ter	

#### Parameter

<b>&lt;name&gt;</b>	+CGSM	GSM function is supported
	+FCLASS	FAX function is supported

# 3 Serial Interface Control Commands

## 3.1. AT&C Set DCD Function Mode

### AT&C Set DCD Function Mode

Execution Command <b>AT&amp;C[&lt;value&gt;]</b>	Response This parameter determines how the state of circuit 109(DCD) relates to the detection of received line signal from the distant end. <b>OK</b>
Reference V.25ter	

#### Parameter

<value>	0	DCD line is always ON
	<u>1</u>	DCD line is ON only in the presence of data carrier

## 3.2. AT&D Set DTR Function Mode

### AT&D Set DTR Function Mode

Execution Command <b>AT&amp;D[&lt;value&gt;]</b>	Response This parameter determines how the TA responds when circuit 108/2(DTR) is changed from the ON to the OFF condition during data mode. <b>OK</b>
Reference V.25ter	

#### Parameter

<value>	<u>0</u>	TA ignores status on DTR
	1	ON->OFF on DTR: Change to command mode with remaining the connected call

2	ON->OFF on DTR: Disconnect data call, change to command mode. During state DTR = OFF auto-answer is off
---	---------------------------------------------------------------------------------------------------------

### 3.3. AT+ICF Set TE-TA Control Character Framing

#### AT+ICF Set TE-TA Control Character Framing

Test Command <b>AT+ICF=?</b>	Response <b>+ICF:</b> (list of supported <b>&lt;format&gt;s</b> ), (list of supported <b>&lt;parity&gt;s</b> )  <b>OK</b>
Read Command <b>AT+ICF?</b>	Response <b>+ICF:</b> <b>&lt;format&gt;</b> , <b>&lt;parity&gt;</b>  <b>OK</b>
Write Command <b>AT+ICF=[&lt;format&gt;,&lt;parity&gt;]</b>	Response This parameter setting determines the serial interface character framing format and parity received by TA from TE.  <b>OK</b>
Reference V.25ter	

#### Parameter

<b>&lt;format&gt;</b>	1	8 data 0 parity 2 stop
	2	8 data 1 parity 1 stop
	3	8 data 0 parity 1 stop
	4	7 data 0 parity 2 stop
	5	7 data 1 parity 1 stop
	6	7 data 0 parity 1 stop
<b>&lt;parity&gt;</b>	0	Odd
	1	Even
	2	Mark (1)
	3	Space (0)

#### NOTES

1. The command is applied for command state.
2. The **<parity>** field is ignored if the **<format>** field specifies no parity.



### 3.4. AT+IFC Set TE-TA Local Data Flow Control

#### AT+IFC Set TE-TA Local Data Flow Control

Test Command <b>AT+IFC=?</b>	Response <b>+IFC:</b> (list of supported <b>&lt;dce_by_dte&gt;</b> s), (list of supported <b>&lt;dte_by_dce&gt;</b> s)  <b>OK</b>
Read Command <b>AT+IFC?</b>	Response <b>+IFC:</b> <b>&lt;dce_by_dte&gt;</b> , <b>&lt;dte_by_dce&gt;</b>  <b>OK</b>
Write Command <b>AT+IFC=&lt;dce_by_dte&gt;,&lt;dte_by_dce&gt;</b>	Response This parameter setting determines the data flow control on the serial interface for data mode.  <b>OK</b>
Reference V.25ter	

#### Parameter

<b>&lt;dce_by_dte&gt;</b>	Specifies the method will be used by TE when receiving data from TA
0	None
1	XON/XOFF, do not pass characters on to data stack
2	RTS flow control
<b>&lt;dte_by_dce&gt;</b>	Specifies the method will be used by TA when receiving data from TE
0	None
1	XON/XOFF
2	CTS flow control

#### NOTE

This flow control is applied for data mode.

#### Example

```
AT+IFC=2,2 // Open the hardware flow control
OK
AT+IFC?
+IFC: 2,2
```

OK

### 3.5. AT+ILRR Set TE-TA Local Data Rate Reporting Mode

#### AT+ILRR Set TE-TA Local Data Rate Reporting Mode

Test Command <b>AT+ILRR=?</b>	Response <b>+ILRR:</b> (list of supported <value>s)  <b>OK</b>
Read Command <b>AT+ILRR?</b>	Response <b>+ILRR:</b> <value>  <b>OK</b>
Write Command <b>AT+ILRR=[&lt;value&gt;]</b>	Response This parameter setting determines whether or not an intermediate result code of local rate is reported when the connection is established. The rate is applied after the final result code of the connection is transmitted to TE.  <b>OK</b>
Reference V.25ter	

#### Parameter

<value>	0	Disables reporting of local port rate
	1	Enables reporting of local port rate

#### NOTE

If the <value> is set to 1, the following intermediate result will come out on connection to indicate the port rate settings.

**+ILRR:<rate>**

<rate>	Port rate setting on call connection in Baud per second
	300
	1200
	2400
	4800
	9600
	14400
	19200
	28800

38400  
57600  
115200

### 3.6. AT+IPR Set TE-TA Fixed Local Rate

AT+IPR Set TE-TA Fixed Local Rate	
Test Command <b>AT+IPR=?</b>	Response <b>+IPR:</b> (list of supported auto detectable <b>&lt;rate&gt;s</b> ),(list of supported fixed-only <b>&lt;rate&gt;s</b> )  <b>OK</b>
Read Command <b>AT+IPR?</b>	Response <b>+IPR: &lt;rate&gt;</b>  <b>OK</b>
Write Command <b>AT+ IPR=&lt;rate&gt;</b>	Response This parameter setting determines the data rate of the TA on the serial interface. After the delivery of any result code associated with the current command line, the rate of command takes effect.  <b>OK</b>
Reference V.25ter	

#### Parameter

<b>&lt;rate&gt;</b>	Baud rate per second 0 (Autobauding) 75 150 300 600 1200 2400 4800 9600 14400 19200 28800 38400
---------------------	----------------------------------------------------------------------------------------------------------------------------------------

57600  
115200

## NOTES

1. The default configuration of **AT+IPR** is adaptive baud enabled (**AT+IPR=0**).
2. If a fixed baud rate is set, make sure that both TE (DTE, usually external processor) and TA (DCE, Quectel GSM module) are configured to the same rate. If adaptive baud is enabled, the TA could automatically recognize the baud rate currently used by the TE after receiving “**AT**” or “**at**” string.
3. The value of **AT+IPR** cannot be restored with **AT&F** and **ATZ**, but it is still storable with **AT&W** and visible in **AT&V**.
4. In multiplex mode, the baud rate cannot be changed by the write command **AT+IPR=<rate>**, and the setting is invalid and not stored even if **AT&W** is executed after the write command.
5. A selected baud rate takes effect after the write commands are executed and acknowledged by “**OK**”.

## Example

```

AT+IPR=115200           // Set fixed baud rate to 115200

OK
AT&W                   // Store current setting, that is, the serial
                        communication speed is 115200 after restart
                        module

OK
AT+IPR?
+IPR: 115200

OK

```

### 3.6.1. Adaptive Baud

To take advantage of adaptive baud mode, specific attention must be paid to the following requirements:

1. Adaptive baud synchronization between TE and TA.
  - Ensure that TE and TA are correctly synchronized and the baud rate used by the TE is detected by the TA. To allow the baud rate to be synchronized simply use an “**AT**” or “**at**” string. This is necessary after customer activates adaptive baud or when customer starts up the module with adaptive baud enabled.
  - It is recommended to wait for 2 to 3 seconds before sending the first “**AT**” or “**at**” string after the module is started up with adaptive baud enabled. Otherwise undefined characters might be returned.
2. Restriction on adaptive baud operation.
  - The serial interface shall be used with 8 data bits, no parity and 1 stop bit (factory setting).

- The command “**A**” can’t be used.
  - Only the string “**AT**” or “**at**” can be detected (either “**AT**” or “**at**”).
  - URCs that may be issued before the TA detects a new baud rate by receiving the first AT character, and they will be sent at the previously detected baud rate.
  - If TE’s baud rate is changed after TA has recognized the earlier baud rate, loss of synchronization between TE and TA would be encountered and an “**AT**” or “**at**” string must be re-sent by TE to regain synchronization on baud rate. To avoid undefined characters during baud rate resynchronization and the possible malfunction of resynchronization, it is not recommended to switch TE’s baud rate when adaptive baud is enabled. Especially, this operation is forbidden in data mode.
3. Adaptive baud and baud rate after restarting.
- In the adaptive baud mode, the detected baud rate is not saved. Therefore, resynchronization is required after restarting the module.
  - Unless the baud rate is determined, an incoming CSD call can’t be accepted. This must be taken into account when adaptive baud and auto-answer mode (**ATS0** ≠ **0**) are enabled at the same time, especially if SIM PIN 1 authentication is done automatically and the setting **ATS0** ≠ **0** is stored to the user profile with **AT&W**.
  - Until the baud rate is synchronized, URCs after restarting will not be output when adaptive baud is enabled.
4. Adaptive baud and multiplex mode.  
If adaptive baud is active it is not recommended to switch to multiplex mode.
5. Adaptive baud and Windows modem.
- The baud rate used by Windows modem can be detected while setting up a dial-up GPRS/CSD connection. However, some Windows modem drivers switch TE’s baud rate to default value automatically after the GPRS call is terminated. In order to prevent no response to the Windows modem when it happens, it is not recommended to establish the dial-up GPRS/CSD connection in adaptive baud mode.
  - Based on the same considerations, it is also not recommended to establish the FAX connection in adaptive baud mode for PC FAX application, such as WinFax.

**NOTE**

To assure reliable communication and avoid any problem caused by undetermined baud rate between DCE and DTE, it is strongly recommended to configure a fixed baud rate and save it instead of using adaptive baud after start-up.

### 3.7. AT+CMUX Multiplexer Control

#### AT+CMUX Multiplexer Control

Test Command	Response
AT+CMUX=?	+CMUX: (list of supported <mode>s), (<subset>s),

# 4 Status Control Commands

## 4.1. AT+CEER Extended Error Report

### AT+CEER Extended Error Report

Test Command <b>AT+CEER=?</b>	Response <b>OK</b>
Execution Command <b>AT+CEER</b>	Response TA returns an extended report of the reason for the last call release. <b>+CEER: &lt;locationID&gt;,&lt;cause&gt;</b>  <b>OK</b>
Reference GSM 07.07	

### Parameter

<b>&lt;locationID&gt;</b>	Location ID as number code. Location IDs are listed in Section 8.3.1. Each ID is related with another table that contains a list of <b>&lt;cause&gt;</b> s.
<b>&lt;cause&gt;</b>	Reason for last call release as number code. The number codes are listed in several tables, sorted by different categories. The tables can be found proceeding from the Location ID given in Section 8.3.1

### Example

```

AT+CEER // Query error reporting in normal state, return "No error"
+CEER: 0,0

OK
ATD10086;
OK
AT+CLCC
+CLCC: 1,0,0,0,0,"10086",129,""

OK
    
```

```
NO CARRIER // Established a call and the remote party hangs up the call
AT+CEER // Query error reporting, the <locationID>=1 means "Cause
// for protocol stack(PS) layer", <cause>=16 means
// "Normal call clearing"

+CEER: 1,16

OK
```

## 4.2. AT+CPAS Mobile Equipment Activity Status

### AT+CPAS Mobile Equipment Activity Status

Test Command <b>AT+CPAS=?</b>	Response <b>+CPAS:</b> (list of supported <pas>s)  <b>OK</b>
Execution Command <b>AT+CPAS</b>	Response TA returns the activity status of ME. <b>+CPAS:</b> <pas>  <b>OK</b> If error is related to ME functionality: <b>+CME ERROR:</b> <err>
Reference GSM 07.07	

### Parameter

<pas>	0	Ready
	2	Unknown (ME is not guaranteed to respond to instructions)
	3	Ringing
	4	Call in progress or call hold

### Example

```
AT+CPAS
+CPAS: 0 // Module is idle

OK
ATD10086;
OK
```

**AT+CLCC**

+CLCC: 1,0,3,0,0,"10086",129,""

OK

**AT+CPAS**

+CPAS: 3 // Module is incoming call (ringing)

OK

**AT+CLCC**

+CLCC: 1,0,0,0,0,"10086",129,""

OK

**AT+CPAS**

+CPAS: 4 // Call in progress

OK

### 4.3. AT+QINDRI Indicate RI when Using URC

#### AT+QINDRI Indicate RI when Using URC

Test Command <b>AT+QINDRI=?</b>	Response <b>+QINDRI:</b> (list of supported <status>s)
------------------------------------	-----------------------------------------------------------

OK

Read Command <b>AT+QINDRI?</b>	Response <b>+QINDRI:</b> <status>
-----------------------------------	--------------------------------------

OK

Write Command <b>AT+QINDRI=&lt;status&gt;</b>	Response <b>OK</b> <b>ERROR</b>
--------------------------------------------------	---------------------------------------

ERROR

Reference

#### Parameter

<status>	0	Off
	1	On



## 4.4. AT+QMOSTAT Show State of Mobile Originated Call

### AT+QMOSTAT Show State of Mobile Originated Call

Test Command <b>AT+QMOSTAT=?</b>	Response <b>+QMOSTAT:</b> (list of supported <mode>s)  <b>OK</b>
Read Command <b>AT+QMOSTAT?</b>	Response <b>+QMOSTAT:</b> <mode>  <b>OK</b>
Write Command <b>AT+QMOSTAT=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

<mode>	<u>0</u>	Do not show call state of mobile originated call
	1	Show call state of mobile originated call. After dialing call numbers, the URC strings of <b>MO RING</b> will be sent if the other call side is alerted and the URC strings of <b>MO CONNECTED</b> will be sent if the call is established

### Example

```

AT+QMOSTAT=1           // Show call state of mobile originated call
OK
ATD10086;
OK

MO RING                // The other call side is alerted

MO CONNECTED          // The call is established
    
```

## 4.5. AT+QIURC Enable or Disable Initial URC Presentation

### AT+QIURC Enable or Disable Initial URC Presentation

Test Command <b>AT+QIURC=?</b>	Response <b>+QIURC:</b> (list of supported <mode>s)
-----------------------------------	--------------------------------------------------------

	OK
Read Command <b>AT+QIURC?</b>	Response <b>+QIURC: &lt;mode&gt;</b>
	OK
Write Command <b>AT+QIURC=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

<b>&lt;mode&gt;</b>	0	Disable URC presentation
	1	Enable URC presentation

#### NOTE

When the module powers on and initialization procedure is over, URC "Call Ready" will be presented if <mode> is 1.

## 4.6. AT+QEXTUNSOL Enable/Disable Proprietary Unsolicited

### Indications

<b>AT+QEXTUNSOL Enable/Disable Proprietary Unsolicited Indications</b>	
Test Command <b>AT+QEXTUNSOL=?</b>	Response <b>+QEXTUNSOL: (list of supported &lt;exunsol&gt;s)</b>
	OK
Write Command <b>AT+QEXTUNSOL=&lt;exunsol&gt;,&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

**<exunsol>** String type. Values currently reserved by the present document  
 "SQ" Signal Quality Report. Displays signal strength and channel bit error rate (similar

---

		to <b>AT+CSQ</b> ) in form <b>+CSQN: &lt;rsssi&gt;, &lt;ber&gt;</b> when values change.
"FN"		Forbidden network available only. When returning to a non-registered state, this indicates whether all the available PLMNs are forbidden.
"MW"		SMS Message waiting. On receiving an SMS (as indicated by the <b>+CMTI</b> indication) the SMS is decoded and checked to see if it contains one or more of the message waiting indications (i.e. voicemail, email, fax etc). If so, an unsolicited indication is shown in the form for each message type: <b>+QMWT: &lt;store&gt;, &lt;index&gt;, &lt;voice&gt;, &lt;fax&gt;, &lt;email&gt;, &lt;other&gt;</b> . Where <b>&lt;store&gt;</b> is the message store containing the SM, index is the message index and <b>&lt;voice&gt;</b> , <b>&lt;email&gt;</b> , <b>&lt;fax&gt;</b> , <b>&lt;other&gt;</b> contain the number of waiting messages (with '0' defined as clear indication, non-zero for one or more waiting messages) or blank for not specified in this message.
"UR"		Unsolicited result code. Produces an unsolicited indication in the following call state transition. Multiple notifications may occur for the same transition <b>+QGURC: &lt;event&gt;</b> . Where <b>&lt;event&gt;</b> describes the current call state: <b>&lt;event&gt;</b> : <ul style="list-style-type: none"> <li>0 Terminated active call, at least one held call remaining</li> <li>1 Attempt to make an Mobile Originated call</li> <li>2 Mobile Originated Call has failed for some reason</li> <li>3 Mobile Originated call is ringing</li> <li>4 Mobile Terminated call is queued (Call waiting)</li> <li>5 Mobile Originated Call now has been connected</li> <li>6 Mobile Originated or Mobile Terminated call has been disconnected</li> <li>7 Mobile Originated or Mobile Terminated call hung up.</li> <li>8 Mobile Originated call dialed a non-emergency number in emergency mode</li> <li>9 No answer for mobile Originated call</li> <li>10 Remote number busy for Mobile Originated call</li> </ul>
"BC"		Battery Charge. Displays battery connection status and battery charge level (similar to <b>AT+CBC</b> ) in form <b>+CBCN: &lt;bcs&gt;, &lt;bcl&gt;</b> when values change.
"BM"		Band mode. Displays band mode (similar to <b>AT+QBAND</b> ) in form <b>+QBAND: &lt;band&gt;</b> when value changes.
"SM"		Additional SMS Information. Displays additional information about SMS events in the form of Unsolicited messages of the following format <b>+TSMSINFO: &lt;CMS error info&gt;</b> where <b>&lt;CMS error info&gt;</b> is a standard CMS error in the format defined by the <b>AT+CMEE</b> command i.e. either a number or a string.
"CC"		Call information. Displays the disconnected call ID and the remaining call numbers after one of the call is disconnected. <b>+CCINFO: &lt;Call id disconnected&gt;, &lt;Remain calls&gt;</b>
<b>&lt;mode&gt;</b>	<u>0</u>	Disable
	1	Enable
	2	Query

---

## 4.7. AT+QINISTAT Query State of Initialization

### AT+QINISTAT Query State of Initialization

Test Command <b>AT+QINISTAT=?</b>	Response <b>OK</b>
Execution Command <b>AT+QINISTAT</b>	Response <b>+QINISTAT: &lt;state&gt;</b>  <b>OK</b>
Reference	

#### Parameter

<b>&lt;state&gt;</b>	0	No initialization
	1	Ready to execute AT command
	2	Phonebook has finished initialization
	3	SMS has finished initialization

#### NOTE

When <state> is 3, it also means initialization of SIM card related functions has been finished.

## 4.8. AT+QNSTATUS Query GSM Network Status

### AT+QNSTATUS Query GSM Network Status

Test Command <b>AT+QNSTATUS=?</b>	Response <b>OK</b>
Execution Command <b>AT+QNSTATUS</b>	Response <b>+QNSTATUS: &lt;status&gt;</b>  <b>OK</b>  If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference	

**Parameter**

<b>&lt;status&gt;</b>	255	Not ready to retrieve network status
	0	Work in normal state
	1	No available cell
	2	Only limited service is available

**4.9. AT+QSIMDET Switch on or off Detecting SIM Card**

**AT+QSIMDET Switch on or off Detecting SIM Card**

Test Command <b>AT+QSIMDET=?</b>	Response <b>+QSIMDET: (0,1),(0,1)</b>  <b>OK</b>
Read Command <b>AT+QSIMDET?</b>	Response <b>+QSIMDET: &lt;mode&gt;,&lt;active&gt;</b>  <b>OK</b>
Write Command <b>AT+QSIMDET=&lt;mode&gt;[,&lt;active&gt;]</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

**Parameter**

<b>&lt;mode&gt;</b>	<u>0</u>	Switch off detecting SIM card
	1	Switch on detecting SIM card
<b>&lt;active&gt;</b>	<u>0</u>	Low level of SIM_PRESENCE pin indicates SIM card is present
	1	High level of SIM_PRESENCE pin indicates SIM card is present

# 5 SIM Related Commands

## 5.1. AT+CIMI Request International Mobile Subscriber Identity (IMSI)

### AT+CIMI Request International Mobile Subscriber Identity (IMSI)

Test Command <b>AT+CIMI=?</b>	Response <b>OK</b>
Execution Command <b>AT+CIMI</b>	Response TA returns <IMSI>for identifying the individual SIM which is attached to ME. <b>&lt;IMSI&gt;</b>  <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

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

### Example

```
AT+CIMI
460023210226023           // Query IMSI number of SIM which is attached to ME
OK
```

## 5.2. AT+CLCK Facility Lock

### AT+CLCK Facility Lock

<p>Test Command <b>AT+CLCK=?</b></p>	<p>Response <b>+CLCK:</b> (list of supported <b>&lt;fac&gt;</b>s)  <b>OK</b></p>
<p>Write Command <b>AT+CLCK=&lt;fac&gt;,&lt;mode&gt;,&lt;passwd&gt;[,&lt;class&gt;]</b></p>	<p>Response This command is used to lock, unlock or interrogate a ME or a network facility <b>&lt;fac&gt;</b>. Password is normally needed to do such actions. When querying the status of a network service (<b>&lt;mode&gt;=2</b>) the response line for 'not active' case (<b>&lt;status&gt;=0</b>) should be returned only if service is not active for any <b>&lt;class&gt;</b>.  If <b>&lt;mode&gt;&lt;&gt;2</b> and command is successful <b>OK</b> If <b>&lt;mode&gt;=2</b> and command is successful <b>+CLCK: &lt;status&gt;[,&lt;class1&gt;[&lt;CR&gt;&lt;LF&gt;+CLCK: &lt;status&gt;, class2....]]</b>  <b>OK</b></p>
<p>Reference GSM 07.07</p>	

## Parameter

<b>&lt;fac&gt;</b>	"PS"	PH-SIM (lock Phone to SIM card) (ME asks password when other than current SIM card inserted; ME may remember certain amount of previously used cards thus not requiring password when they are inserted)
	"SC"	SIM (lock SIM card) (SIM asks password in ME power-up and when this lock command is issued)
	"AO"	BAOC (Barr All Outgoing Calls) (refer to GSM02.88[6] clause 1)
	"OI"	BOIC (Barr Outgoing International Calls) (refer to GSM02.88[6] clause 1)
	"OX"	BOIC-exHC (Barr Outgoing International Calls except to Home Country) (refer to GSM02.88[6] clause 1)
	"AI"	BAIC (Barr All Incoming Calls) (refer to GSM02.88[6] clause 2)
	"IR"	BIC-Roam (Barr Incoming Calls when Roaming outside the home country) (refer to GSM02.88 [6] clause 2)
	"AB"	All Barring services (refer to GSM02.30[19]) (applicable only for <b>&lt;mode&gt;=0</b> )
	"AG"	All out Going barring services (refer to GSM02.30[19])(applicable only for <b>&lt;mode&gt;=0</b> )
	"AC"	All in Coming barring services (refer to GSM02.30[19])(applicable only for <b>&lt;mode&gt;=0</b> )
	"FD"	SIM fixed dialing memory: If the mobile is locked to "FD", only the phone numbers stored to the "FD" memory can be dialed

	"PF"	Lock Phone to the very first SIM card
	"PN"	Network Personalization (refer to GSM 02.22)
	"PU"	Network subset Personalization (refer to GSM 02.22)
	"PP"	Service Provider Personalization (refer to GSM 02.22)
	"PC"	Corporate Personalization (refer to GSM 02.22)
<mode>	0	Unlock
	1	Lock
	2	Query status
<passwd>	Password	
<class>	1	Voice
	2	Data
	4	FAX
	7	All telephony except SMS (Default)
	8	Short message service
	16	Data circuit sync
	32	Data circuit async
<status>	0	Off
	1	On

### Example

```

AT+CLCK="SC",2
+CLCK: 0 // Query the status of SIM card lock,0-unlock

OK
AT+CLCK="SC",1,"1234" // Lock SIM card, the password is 1234
OK
AT+CLCK="SC",2
+CLCK: 1 // Query the status of SIM card lock,1-lock

OK
AT+CLCK="SC",0,"1234" // Unlock SIM card
OK

```

### 5.3. AT+CPIN Enter PIN

#### AT+CPIN Enter PIN

Test Command	Response
AT+CPIN=?	OK
Read Command	Response
AT+CPIN?	TA returns an alphanumeric string indicating whether or not some password is required.



	<b>+CPIN: &lt;code&gt;</b>
	<b>OK</b>
Write Command <b>AT+CPIN=&lt;pin&gt;[, &lt;new pin&gt;]</b>	Response TA stores a password which is necessary before it can be operated (SIM PIN, SIM PUK, PH-SIM PIN, etc.). If the PIN is to be entered twice, the TA shall automatically repeat the PIN. If no PIN request is pending, no action is taken and an error message, <b>+CME ERROR</b> , is returned to TE. If the PIN required is SIM PUK or SIM PUK2, the second pin is required. This second pin, <b>&lt;new pin&gt;</b> , is used to replace the old pin in the SIM
Reference GSM 07.07	<b>OK</b>

### Parameter

<b>&lt;code&gt;</b>	READY	No further entry needed
	SIM PIN	ME is waiting for SIM PIN
	SIM PUK	ME is waiting for SIM PUK
	PH_SIM PIN	ME is waiting for phone to SIM card (antitheft)
	PH_SIM PUK	ME is waiting for SIM PUK (antitheft)
	SIM PIN2	PIN2, e.g. it is possible to edit the FDN book only if preceding command was acknowledged with <b>+CME ERROR:17</b>
	SIM PUK2	Possible only if preceding command was acknowledged with error <b>+CME ERROR: 18</b>
<b>&lt;pin&gt;</b>	String type; password	
<b>&lt;new pin&gt;</b>	String type; If the PIN required is SIM PUK or SIMPUK2: new password	

### Example

```

AT+CPIN?
+CPIN: SIM PIN           // Query PIN code is locked

OK
AT+CPIN=1234           // PIN
+CPIN: READY

OK
AT+CPIN?               // PIN has already been entered

```

```
+CPIN: READY

OK
AT+CPIN?
+CPIN: SIM PUK                // Query PUK code is locked

OK
AT+CPIN="26601934","1234"    // Enter PUK and new PIN password
+CPIN: READY

OK
AT+CPIN?
+CPIN: READY                // PUK has already been entered

OK
```

## 5.4. AT+CPWD Change Password

### AT+CPWD Change Password

Test Command <b>AT+CPWD=?</b>	Response TA returns a list of pairs which present the available facilities and the maximum length of their password. <b>+CPWD:</b> (list of supported <fac>s), (<pwdlength>s)  <b>OK</b>
Write Command <b>AT+CPWD=&lt;fac&gt;,&lt;oldpwd&gt;,&lt;newpwd&gt;</b> >	Response TA sets a new password for the facility lock function.  <b>OK</b>
Reference GSM 07.07	

### Parameter

<fac>	"PS"	Phone locked to SIM (device code). The "PS" password may either be individually specified by the client or, depending on the subscription, supplied from the provider (e.g. with a prepaid mobile)
	"SC"	SIM (lock SIM card) (SIM asks password in ME power-up and when this lock Command issued)
	"AO"	BAOC (Barr All Outgoing Calls) (refer to GSM02.88[6] clause 1)
	"OI"	BOIC (Barr Outgoing International Calls) (refer to GSM02.88[6] clause 1)

"OX"	BOIC-exHC (Barr Outgoing International Calls except to Home Country) (refer to GSM02.88[6] clause 1)
"AI"	BAIC (Barr All Incoming Calls) (refer to GSM02.88[6] clause 2)
"IR"	BIC-Roam (Barr Incoming Calls when Roaming outside the home country) (refer to GSM02.88 [6] clause 2)
"AB"	All Barring services (refer to GSM02.30[19]) (applicable only for <mode>=0)
"AG"	All outgoing barring services (refer to GSM02.30[19]) (applicable only for <mode>=0)
"AC"	All incoming barring services (refer to GSM02.30[19]) (applicable only for <mode>=0)
"FD"	SIM fixed dialing memory feature
"P2"	SIM PIN2

<pwdlength> Integer. Max. length of password

<oldpwd> Password specified for the facility from the user interface or with command

<newpwd> New password

### Example

```

AT+CPIN?
+CPIN: READY

OK
AT+CPWD="SC","1234","4321"           // Change SIM card password to "4321"
OK
AT+CPIN?                             // Restart module or re-activate the SIM card, query PIN
                                     // code is locked
+CPIN: SIM PIN

OK
AT+CPIN="4321"                       // PIN must be entered to define a new password "4321"
+CPIN: READY

OK

```

## 5.5. AT+CRSM Restricted SIM Access

### AT+CRSM Restricted SIM Access

Test Command	Response
AT+CRSM=?	OK
Write Command	Response
AT+CRSM=<Command>[,<fileId>[,<P1>,<P2>,<P3>[,<data>]]]	+CRSM: <sw1>, <sw2> [,<response>]

	OK ERROR +CME ERROR: <err>
Reference GSM 07.07	

## Parameter

<b>&lt;Command&gt;</b>	176 READ BINARY 178 READ RECORD 192 GET RESPONSE 214 UPDATE BINARY 220 UPDATE RECORD 242 STATUS All other values are reserved; refer to GSM 11.11
<b>&lt;fileid&gt;</b>	Integer type; this is the identifier for an elementary data file on SIM. Mandatory for every Command except STATUS
<b>&lt;P1&gt;,&lt;P2&gt;,&lt;P3&gt;</b>	Integer type; parameters passed on by the ME to the SIM. These parameters are mandatory for every command, except GET RESPONSE and STATUS. The values are described in GSM 11.11
<b>&lt;data&gt;</b>	Information which shall be written to the SIM (hexadecimal character format)
<b>&lt;sw1&gt;,&lt;sw2&gt;</b>	Integer type; information from the SIM about the execution of the actual command. These parameters are delivered to the TE in both cases, on successful or failed execution of the command
<b>&lt;response&gt;</b>	Response of a successful completion of the command previously issued (hexadecimal character format). STATUS and GET RESPONSE return data, which gives information about the current elementary data field. This information includes the type of file and its size (refer to GSM 11.11). After READ BINARY or READ RECORD command the requested data will be returned. The parameter is not returned after a successful UPDATE BINARY or UPDATE RECORD command

## Example

**AT+CRSM=242**

**+CRSM: 145, 211, "000000007F10020000000000A13000C0400838A808A"**

**OK**

// <sw1>=145,<sw2>=211,"000000007F10020000000000A13000C0400838A808A" which is the command previously return data, refer to GSM 11.11

## 5.6. AT+CSIM Generic SIM Access

<b>AT+CSIM Generic SIM Access</b>	
Test Command <b>AT+CSIM=?</b>	Response <b>+CSIM:</b> (list of supported <operation>s),<file_id>,<offset>/<record_id>,<len>/"data "  <b>OK</b>
Write Command <b>AT+CSIM=&lt;operation&gt;,&lt;file_id&gt;,&lt;offset&gt;,&lt;record_id&gt;,&lt;len&gt;,&lt;data&gt;</b>	Response <b>+CSIM: &lt;command&gt;,&lt;response&gt;</b>  <b>OK</b> <b>ERROR</b>
Reference GSM 07.07	

### Parameter

<operation>	0	Read operation
	1	Write operation
<file_id>	Integer type: SIM elementary file ID	
<offset>	Integer type: offset for reading and writing SIM	
<len>	Integer type: length of parameter	
<data>	String type: hex format: parameter is sent or received from the ME to the SIM	

## 5.7. AT+QCSPWD Change PS Super Password

<b>AT+QCSPWD Change PS Super Password</b>	
Test Command <b>AT+QCSPWD=?</b>	Response <b>OK</b>
Write Command <b>AT+QCSPWD=&lt;oldpwd&gt;,&lt;newpwd&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

<oldpwd>	String type. Old password and length should be 8
----------	--------------------------------------------------

<newpwd> String type. New password and length should be 8

#### NOTES

1. Default value of <oldpwd> is "12345678".
2. If the module is locked to a specific SIM card through +CLCK and password lost or SIM state is PH-SIM PUK, you can use the super password to unlock it.

## 5.8. AT+QCCID Show ICCID

### AT+QCCID Show ICCID

Test Command <b>AT+QCCID=?</b>	Response <b>OK</b>
Execution Command <b>AT+QCCID</b>	Response <b>ICCID data</b>  <b>OK</b>
Reference	

#### Example

```
AT+QCCID // Query ICCID of the SIM card
898600220909A0206023

OK
```

## 5.9. AT+QGID Get SIM Card Group Identifier

### AT+QGID Get SIM Card Group Identifier

Execution Command <b>AT+QGID</b>	Response <b>+QGID: &lt;gid1&gt; &lt;gid2&gt;</b>  <b>OK</b> <b>ERROR</b>
Reference	

**Parameter**

<b>&lt;gid1&gt;</b>	Integer type of SIM card group identifier 1
<b>&lt;gid2&gt;</b>	Integer type of SIM card group identifier 2

**NOTE**

If the SIM supports GID files, the GID values are returned. Otherwise 0xff is returned.

### 5.10. AT+QSIMVOL Select SIM Card Operating Voltage

**AT+QSIMVOL Select SIM Card Operating Voltage**

Test Command <b>AT+QSIMVOL=?</b>	Response <b>+QSIMVOL:</b> (list of supported <b>&lt;mode&gt;</b> s)  <b>OK</b>
Read Command <b>AT+QSIMVOL?</b>	Response <b>+QSIMVOL:</b> <b>&lt;mode&gt;</b>  <b>OK</b>
Write Command <b>AT+QSIMVOL=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b> <b>+CME ERROR:</b> <b>&lt;err&gt;</b>
Reference	

**Parameter**

<b>&lt;mode&gt;</b>	<u>0</u>	Recognize 1.8V and 3.0V SIM card (Default)
	1	Recognize 1.8V SIM card only
	2	Recognize 3.0V SIM card only

**NOTE**

**AT+QSIMVOL** can take effect only when the command is set successfully and the module is restarted.

# 6 Network Service Commands

## 6.1. AT+COPS Operator Selection

### AT+COPS Operator Selection

Test Command

**AT+COPS=?**

Response

TA returns a list of quadruplets, each representing an operator present in the network. Any of the formats may be unavailable and should then be an empty field. The list of operators shall be in order: home network, networks referenced in SIM and other networks.

**+COPS:** (list of supported<stat>, long alphanumeric <oper>, short alphanumeric <oper>, numeric <oper>s)[, (list of supported <mode>s), (list of supported <format>s)]

**OK**

If error is related to ME functionality:

**+CME ERROR: <err>**

Read Command

**AT+COPS?**

Response

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

**+COPS: <mode>[,<format>[,<oper>]]**

**OK**

If error is related to ME functionality:

**+CME ERROR: <err>**

Write Command

**AT+COPS**

**=<mode>[,<format>[,<oper>]]**

Response

TA forces an attempt to select and register the GSM network operator. If the selected operator is not available, no other operator shall be selected (except <mode>=4). The format of selected operator name shall apply to further read commands (<+COPS?>).

**OK**

If error is related to ME functionality:



	<b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;stat&gt;</b>	0	Unknown
	1	Operator available
	2	Operator current
	3	Operator forbidden
<b>&lt;oper&gt;</b>	Operator in format as per <b>&lt;mode&gt;</b>	
<b>&lt;mode&gt;</b>	0	Automatic mode; <b>&lt;oper&gt;</b> field is ignored
	1	Manual operator selection; <b>&lt;oper&gt;</b> field shall be present
	2	Manual deregister from network
	3	Set only <b>&lt;format&gt;</b> (for read Command <b>+COPS?</b> ) – not shown in Read Command response
	4	Manual/automatic selected; if manual selection fails, automatic mode ( <b>&lt;mode&gt;</b> =0) is entered
<b>&lt;format&gt;</b>	0	Long format alphanumeric <b>&lt;oper&gt;</b> ; can be up to 16 characters long
	1	Short format alphanumeric <b>&lt;oper&gt;</b>
	2	Numeric <b>&lt;oper&gt;</b> ; GSM Location Area Identification number

### Example

```

AT+COPS=? // List all current network operators
+COPS: (2,"CHINA MOBILE","CMCC","46000"),(3,"CHINA UNICOM GSM","CU-GSM","46001"),(0-4),(0-2)

OK
AT+COPS? // Query the currently selected network operator
+COPS: 0,0,"CHINA MOBILE"

OK

```

## 6.2. AT+CREG Network Registration

### AT+CREG Network Registration

Test Command <b>AT+CREG=?</b>	Response <b>+CREG:</b> (list of supported <b>&lt;n&gt;</b> s)  <b>OK</b>
----------------------------------	-----------------------------------------------------------------------------------

<p>Read Command <b>AT+CREG?</b></p>	<p>Response TA returns the status of result code presentation and an integer <b>&lt;stat&gt;</b> which shows whether the network has currently indicated the registration of the ME. Location information elements <b>&lt;lac&gt;</b> and <b>&lt;ci&gt;</b> are returned only when <b>&lt;n&gt;=2</b> and ME is registered in the network. <b>+CREG: &lt;n&gt;,&lt;stat&gt;[,&lt;lac&gt;,&lt;ci&gt;]</b></p> <p><b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b></p>
<p>Write Command <b>AT+CREG=&lt;n&gt;</b></p>	<p>Response TA controls the presentation of an unsolicited result code <b>+CREG: &lt;stat&gt;</b> when <b>&lt;n&gt;=1</b> and there is a change in the ME network registration status. <b>OK</b></p>
<p>Reference GSM 07.07</p>	

## Parameter

<b>&lt;n&gt;</b>	<u>0</u> 1	Disable network registration unsolicited result code Enable network registration unsolicited result code <b>+CREG: &lt;stat&gt;</b>
<b>&lt;stat&gt;</b>	2 0 1 2 3 4 5	Enable network registration unsolicited result code with location information Not registered, ME is not currently searching a new operator to register to Registered, home network Not registered, but ME is currently searching a new operator to register to Registration denied Unknown Registered, roaming
<b>&lt;lac&gt;</b>		String type; two byte location area code in hexadecimal format
<b>&lt;ci&gt;</b>		String type; two byte cell ID in hexadecimal format

## NOTES

Unsolicited result code

If **<n>=1** and there is a change in the ME network registration status **+CREG: <stat>**

If **<n>=2** and there is a change in the ME network registration status or a change of the network cell:  
**+CREG: <stat>[,<lac>,<ci>]**

## Example

**AT+CREG=1**

```

OK

+CREG: 1 // URC reports that operator has been found
AT+CREG=2 // Activates extended URC mode
OK

+CREG: 1,"1878","0873" // URC reports that operator has been found with location
                        area code and cell ID
    
```

### 6.3. AT+CSQ Signal Quality Report

#### AT+CSQ Signal Quality Report

Test Command <b>AT+CSQ=?</b>	Response <b>+CSQ:</b> (list of supported <b>&lt;rssi&gt;</b> s),(list of supported <b>&lt;ber&gt;</b> s)  <b>OK</b>
Execution Command <b>AT+CSQ</b>	Response <b>+CSQ:</b> <b>&lt;rssi&gt;</b> , <b>&lt;ber&gt;</b>  <b>OK</b> <b>+CME ERROR:</b> <b>&lt;err&gt;</b> Execution Command returns received signal strength indication <b>&lt;rssi&gt;</b> and channel bit error rate <b>&lt;ber&gt;</b> from the ME. Test Command returns values supported by the TA.
Reference GSM 07.07	

#### Parameter

<b>&lt;rssi&gt;</b>	0	-113 dBm or less
	1	-111 dBm
	2...30	-109... -53 dBm
	31	-51 dBm or greater
	99	Not known or not detectable
<b>&lt;ber&gt;</b>	(in percent):	
	0...7	As RXQUAL values in the table in GSM 05.08 subclause 8.2.4
	99	Not known or not detectable

#### Example

```
AT+CSQ=?
```

```
+CSQ: (0-31,99),(0-7,99)

OK
AT+CSQ
+CSQ: 28,0 // Query the current signal strength indication is 28 and
              the bit error rate is 0

OK
```

## 6.4. AT+CPOL Preferred Operator List

### AT+CPOL Preferred Operator List

Test Command	Response
AT+CPOL=?	+CPOL: (list of supported <index>s),(list of supported <format>s)  OK
Read Command AT+CPOL?	Response +CPOL: <index1>,<format>,<oper1> [<CR><LF>+CPOL: <index2>,<format>,<oper2> [...]]  OK +CME ERROR: <err>
Write Command AT+CPOL=<index>[,<format>[,<oper>]]	Response OK  +CME ERROR: <err>
Reference GSM 07.07	

### Parameter

<index>	1	Integer type: order number of operator in SIM preferred operator list
<format>	0	Long format alphanumeric <oper>
	1	Short format alphanumeric <oper>
	2	Numeric <oper>
<oper>	String type: <format> indicates either alphanumeric or numeric format is used (see +COPS command)	

## 6.5. AT+COPN Read Operator Names

### AT+COPN Read Operator Names

Test Command <b>AT+COPN=?</b>	Response <b>OK</b>
Execution Command <b>AT+COPN</b>	Response <b>+COPN: &lt;numeric1&gt;,&lt;alpha1 &gt;</b> <b>[&lt;CR&gt;&lt;LF&gt;+COPN: &lt;numeric2&gt;,&lt;alpha2&gt;</b> <b>[...]]</b>  <b>OK</b> <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

#### Parameter

<b>&lt;numeric&gt;</b>	String type: operator in numeric format (see <b>+COPS</b> )
<b>&lt;alphan&gt;</b>	String type: operator in long alphanumeric format (see <b>+COPS</b> )

## 6.6. AT+QBAND Get and Set Mobile Operation Band

### AT+QBAND Get and Set Mobile Operation Band

Test Command <b>AT+QBAND=?</b>	Response <b>+QBAND: (list of supported &lt;op_band&gt;s)</b>  <b>OK</b>
Read Command <b>AT+QBAND?</b>	Response <b>+QBAND: &lt;op_band&gt;</b>  <b>OK</b>
Write Command <b>AT+QBAND=&lt;op_band&gt;</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference	

#### Parameter

---

<op_band>	"EGSM_MODE"
	"DCS_MODE"
	"PCS_MODE"
	"GSM350_MODE"
	"EGSM_DCS_MODE"
	"GSM850_PCS_MODE"
	"GSM850_EGSM_DCS_PCS_MODE"

---

**NOTE**

The following radio setting to be updated is stored in non-volatile memory.

# 7 Call Related Commands

## 7.1. ATA Answer an Incoming Call

### ATA Answer an Incoming Call

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

#### NOTES

1. Any additional commands on the same command line are ignored.
2. This command may be aborted generally by receiving a character during execution. The aborting is not possible during some states of connection establishment such as handshaking.
3. See also **ATX**.

#### Example

```

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

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

## 7.2. ATD Mobile Originated Call to Dial a Number

### ATD Mobile Originated Call to Dial a Number

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

#### Parameter

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

#### Emergency call:

**<n>** Standardized emergency number 112(no SIM needed)



<b>&lt;mgsn&gt;</b>	String of <b>GSM</b> modifiers:
<b>l</b>	Activates <b>CLIR</b> (Disables presentation of own number to called party)
<b>i</b>	Deactivates <b>CLIR</b> (Enable presentation of own number to called party)
<b>G</b>	Activates closed user group invocation for this call only
<b>g</b>	Deactivates closed user group invocation for this call only
<b>&lt;.&gt;</b>	Only required to set up voice call, return to command state

## NOTES

1. This command may be aborted generally by receiving an **ATH** command or a character during execution. The aborting is not possible during some states of connection establishment such as handshaking.
2. Parameter "l" and "i" only if no \*# code is within the dial string.
3. **<n>** is default value for last number that can be dialed by **ATDL**.
4. \*# codes sent with **ATD** are treated as voice calls. Therefore, the command must be terminated with a semicolon ";".
5. See **ATX** command for setting result code and call monitoring parameters.
6. Responses returned after dialing with **ATD**
  - For voice call two different responses mode can be determined. TA returns "OK" immediately either after dialing was completed or after the call was established. The setting is controlled by **AT+COLP**. Factory default is **AT+COLP=0**, which causes the TA returns "OK" immediately after dialing was completed, otherwise TA will returns "OK", "BUSY", "NO DIAL TONE", "NO CARRIER".
7. Using **ATD** during an active voice call:
  - When a user originates a second voice call while there is already an active voice call, the first call will be automatically put on hold.
  - The current states of all calls can be easily checked at any time by using the **AT+CLCC** command.

## Example

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

## 7.3. ATH Disconnect Existing Connection

### ATH Disconnect Existing Connection

Execution Command	Response
<b>ATH[n]</b>	Disconnect existing call by local TE from command line and terminate call. <b>OK</b>

Reference  
V.25ter

**Parameter**

<n>      0      Disconnect from line and terminate call

**NOTE**

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

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

**+++ Switch From Data Mode to Command Mode**

Execution Command

+++

Response

This command is only available during TA is in data mode, such as, a CSD call, a GPRS connection and a transparent TCPIP connection. The “+++” character sequence causes the TA to cancel the data flow over the AT interface and switch to command mode. This allows you to enter AT command while maintaining the data connection with the remote server or, accordingly, the GPRS connection.

OK

Reference  
V.25ter

**NOTES**

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

## 7.5. ATO Switch from Command Mode to Data Mode

### ATO Switch from Command Mode to Data Mode

Execution Command <b>ATO[n]</b>	Response TA resumes the connection and switches back from command mode to data mode. If connection is not successfully resumed: <b>NO CARRIER</b> else TA returns to data mode from command mode <b>CONNECT</b> <b>&lt;text&gt;</b>
Reference V.25ter	

#### Parameter

**<n>**      0      Switch from command mode to data mode

#### NOTE

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

## 7.6. ATP Select Pulse Dialing

### ATP Select Pulse Dialing

Execution Command <b>ATP</b>	Response <b>OK</b>
Reference V.25ter	

#### NOTE

No effect in GSM.

## 7.7. ATSO Set Number of Rings before Automatically Answering Call

### ATSO Set Number of Rings before Automatically Answering Call

Read Command <b>ATSO?</b>	Response <n>  <b>OK</b>
Write Command <b>ATSO=&lt;n&gt;</b>	Response This parameter setting determines the number of rings before auto-answer. <b>OK</b>
Reference V.25ter	

#### Parameter

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

#### NOTE

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

#### Example

```

ATSO=3 // Set three rings before automatically answering a call
OK

RING // Call coming
RING
RING // Automatically answering the call after three rings
    
```

## 7.8. ATS6 Set Pause before Blind Dialing

### ATS6 Set Pause before Blind Dialing

Read Command <b>ATS6?</b>	Response <n>  <b>OK</b>
------------------------------	----------------------------------

Write Command <b>ATS6=&lt;n&gt;</b>	Response <b>OK</b>
Reference V.25ter	

### Parameter

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

#### NOTE

No effect in GSM

## 7.9. ATS7 Set Number of Seconds to Wait for Connection Completion

### ATS7 Set Number of Seconds to Wait for Connection Completion

Read Command <b>ATS7?</b>	Response <b>&lt;n&gt;</b>  <b>OK</b>
Write Command <b>ATS7=&lt;n&gt;</b>	Response This parameter setting determines the amount of time to wait for the connection completion in case of answering or originating a call. <b>OK</b>
Reference V.25ter	

### Parameter

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

#### NOTES

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

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

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

Read Command <b>ATS8?</b>	Response <n>  <b>OK</b>
Write Command <b>ATS8=&lt;n&gt;</b>	Response <b>OK</b>
Reference V.25ter	

#### Parameter

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

#### NOTE

No effect in GSM.

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

### ATS10 Set Disconnect Delay after Indicating the Absence of Data Carrier

Read Command <b>ATS10?</b>	Response <n>  <b>OK</b>
Write Command <b>ATS10=&lt;n&gt;</b>	Response This parameter setting determines the amount of time that the TA will remain connected in absence of data carrier. If the data carrier is once more detected before disconnection, the TA remains connected. <b>OK</b>
Reference V.25ter	

## Parameter

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

## 7.12. ATT Select Tone Dialing

### ATT Select Tone Dialing

Execution Command <b>ATT</b>	Response <b>OK</b>
Reference V.25ter	

#### NOTE

No effect in GSM.

## 7.13. AT+CBST Select Bearer Service Type

### AT+CBST Select Bearer Service Type

Test Command <b>AT+CBST=?</b>	Response <b>+CBST:</b> (list of supported <speed>s) ,(list of supported <name>s) ,(list of supported <ce>s)  <b>OK</b>
Read Command <b>AT+CBST?</b>	Response <b>+CBST:</b> <speed>,<name>,<ce>  <b>OK</b>
Write Command <b>AT+CBST=[&lt;speed&gt;[,&lt;name&gt;[,&lt;ce&gt;]]]</b>	Response TA selects the bearer service <name> with data rate <speed>, and the connection element <ce> to be used when data calls are originated.  <b>OK</b>
Reference GSM 07.07	

## Parameter

<b>&lt;speed&gt;</b>	0	Adaptive baud
	4	2400 bps(V.22bis)
	5	2400 bps(V.26ter)
	6	4800 bps(V.32)
	<u>7</u>	9600 bps(V.32)
	12	9600 bps(V.34)
	14	14400 bps(V.34)
	68	2400 bps(V.110 or X.31 flag stuffing)
	70	4800 bps(V.110 or X.31 flag stuffing)
	71	9600 bps(V.110 or X.31 flag stuffing)
	75	14400 bps(V.110 or X.31 flag stuffing)
	<b>&lt;name&gt;</b>	<u>0</u>
<b>&lt;ce&gt;</b>	0	Transparent
	<u>1</u>	Non-transparent
	2	Both, transparent preferred
	3	Both, non-transparent preferred

### NOTE

GSM 02.02 lists the allowed combinations of the sub parameters.

## 7.14. AT+CSTA Select Type of Address

### AT+CSTA Select Type of Address

Test Command <b>AT+CSTA=?</b>	Response <b>+CSTA:</b> (list of supported <b>&lt;type&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CSTA?</b>	Response <b>+CSTA:</b> <b>&lt;type&gt;</b>  <b>OK</b>
Reference GSM 07.07	

## Parameter

**< type >** Current address type setting.



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

## 7.15. AT+CLCC List Current Calls of ME

### AT+CLCC List Current Calls of ME

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

### Parameter

<b>&lt;idx&gt;</b>	Integer type; call identification number as described in GSM 02.30 sub clause 4.5.5.1; this number can be used in <b>+CHLD</b> Command operations
<b>&lt;dir&gt;</b>	0 Mobile originated (MO) call 1 Mobile terminated (MT) call
<b>&lt;stat&gt;</b>	State of the call 0 Active 1 Held 2 Dialing (MO call) 3 Alerting (MO call) 4 Incoming (MT call) 5 Waiting (MT call)
<b>&lt;mode&gt;</b>	Bearer/tele service 0 Voice

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

### Example

#### AT+CLCC

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

OK

## 7.16. AT+CR Service Reporting Control

### AT+CR Service Reporting Control

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

### Parameter

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

REL ASYNC Asynchronous non-transparent

REL SYNC Synchronous non-transparent

**NOTE**

Intermediate result code:

If it is enabled, an intermediate result code is transmitted at the point during connect negotiation at which the TA has determined which speed and quality of service will be used, before any error control or data compression reports are transmitted, and before any final result code (e.g. **CONNECT**) is transmitted.

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

### AT+CRC Set Cellular Result Codes for Incoming Call Indication

Test Command <b>AT+CRC=?</b>	Response <b>+CRC:</b> (list of supported <b>&lt;mode&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CRC?</b>	Response <b>+CRC:</b> <b>&lt;mode&gt;</b>  <b>OK</b>
Write Command <b>AT+CRC=[&lt;mode&gt;]</b>	Response TA controls whether or not the extended format of incoming call indication is used.  <b>OK</b>
Reference GSM 07.07	

#### Parameter

<b>&lt;mode&gt;</b>	<u>0</u>	Disable extended format
	1	Enable extended format

**NOTE**

Unsolicited result code:

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

Parameter

**<type>** ASYNC Asynchronous transparent

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

### Example

```

AT+CRC=1 // Enable extended format
OK

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

RING // Indicate incoming call to the TE
ATH
OK

```

## 7.18. AT+CRLP Select Radio Link Protocol Parameter

### AT+CRLP Select Radio Link Protocol Parameter

Test Command <b>AT+CRLP=?</b>	Response TA returns values supported. RLP (Radio Link Protocol) versions 0 and 1 share the same parameter set. TA returns only one line for this set (where <b>&lt;verx&gt;</b> is not present). <b>+CRLP:</b> (list of supported <b>&lt;iws&gt;</b> s),(list of supported <b>&lt;mws&gt;</b> s),(list of supported <b>&lt;T1&gt;</b> s),(list of supported <b>&lt;N2&gt;</b> s),(list of supported <b>&lt;ver1&gt;</b> s),(list of supported <b>&lt;T4&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CRLP?</b>	Response TA returns current settings for RLP version. RLP versions 0 and 1 share the same parameter set. TA returns only one line for this set (where <b>&lt;verx&gt;</b> is not present). <b>+CRLP:</b> <b>&lt;iws&gt;</b> , <b>&lt;mws&gt;</b> , <b>&lt;T1&gt;</b> , <b>&lt;N2&gt;</b> , <b>&lt;ver1&gt;</b> , <b>&lt;T4&gt;</b>  <b>OK</b>
Write Command	Response

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

### Parameter

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

## 7.19. AT+CSNS Single Numbering Scheme

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

### Parameter

<b>&lt;mode&gt;</b>	<u>0</u>	Voice
	1	Alternating voice/FAX, voice first
	2	FAX
	3	Alternating voice/data, voice first
	4	Data

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

## 7.20. AT+CMOD Configure Alternating Mode Calls

### AT+CMOD Configure Alternating Mode Calls

Test Command <b>AT+CMOD=?</b>	Response <b>+CMOD:</b> (list of supported <mode>s)  <b>OK</b>
Write Command <b>AT+CMOD=[&lt;mode&gt;]</b>	Response <b>OK</b> <b>ERROR</b>
Reference GSM 07.07	

#### Parameter

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

## 7.21. AT+QSFR Preference Speech Coding

### AT+QSFR Preference Speech Coding

Test Command <b>AT+QSFR=?</b>	Response <b>+QSFR:</b> (list of supported <mode>s)  <b>OK</b>
Read Command <b>AT+QSFR?</b>	Response <b>+QSFR:</b> <mode>  <b>OK</b>
Write Command <b>AT+QSFR=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>

Reference

**Parameter**

---

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

---

**NOTE**

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

# 8 SMS Commands

## 8.1. AT+CSMS Select Message Service

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

### Parameter

<b>&lt;service&gt;</b>	<u>0</u>	GSM 03.40 and 03.41 (the syntax of SMS AT commands is compatible with GSM 07.05 Phase 2 version 4.7.0; Phase 2+ features which do not require ew command syntax may be supported (e.g. correct routing of messages with new Phase 2+ data coding schemes))
	128	SMS PDU mode - TPDU only used for ending/receiving SMSs
<b>&lt;mt&gt;</b>		Mobile Terminated Messages
	0	Type not supported
	1	Type supported
<b>&lt;mo&gt;</b>		Mobile Originated Messages
	0	Type not supported
	1	Type supported
<b>&lt;bm&gt;</b>		Broadcast Type Messages



0	Type not supported
1	Type supported

## 8.2. AT+CMGF Select SMS Message Format

### AT+CMGF Select SMS Message Format

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

### Parameter

<b>&lt;mode&gt;</b>	<u>0</u>	PDU mode
	1	Text mode

## 8.3. AT+CSCA SMS Service Center Address

### AT+CSCA SMS Service Center Address

Test Command <b>AT+CSCA=?</b>	Response <b>OK</b>
Read Command <b>AT+CSCA?</b>	Response <b>+CSCA:</b> <b>&lt;sca&gt;</b> , <b>&lt;tosca&gt;</b>  <b>OK</b>
Write Command <b>AT+CSCA=&lt;sca&gt;[,&lt;tosca&gt;]</b>	Response TA updates the SMSC address, through which mobile originated SMS are transmitted. In text mode, setting is used

	by sending and writing commands. In PDU mode, setting is used by the same commands, but only when the length of the SMSC address coded into <b>&lt;pdu&gt;</b> parameter equals zero. <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.05	

### Parameter

<b>&lt;sca&gt;</b>	GSM 04.11 RP SC address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by <b>+CSCS</b> in TS 07.07); type of address given by <b>&lt;tosca&gt;</b>
<b>&lt; tosca&gt;</b>	Service center address format GSM 04.11 RP SC address Type-of-Address octet in integer format (default refer to <b>&lt;toda&gt;</b> )

**NOTE**

The Command writes the parameters in NON-VOLATILE memory.

### Example

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

## 8.4. AT+CPMS Preferred SMS Message Storage

AT+CPMS Preferred SMS Message Storage	
Test Command <b>AT+CPMS=?</b>	Response <b>+CPMS:</b> (list of supported <b>&lt;mem1&gt;s</b> ),(list of supported <b>&lt;mem2&gt;s</b> ),(list of supported <b>&lt;mem3&gt;s</b> )  <b>OK</b>
Read Command <b>AT+CPMS?</b>	Response <b>+CPMS:</b>

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

## Parameter

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

### NOTE

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

## Example

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

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

```
OK
```

```
AT+CPMS?
```

```
// Query the current SMS message storage
```

```
+CPMS: "SM",0,50,"SM",0,50,"SM",0,50
```

```
OK
```

## 8.5. AT+CMGD Delete SMS Message

### AT+CMGD Delete SMS Message

Test Command

```
AT+CMGD=?
```

Response

```
+CMGD: (list of supported <index>s),(list of supported <delflag>s)
```

```
OK
```

Write Command

```
AT+CMGD=<index>[,<delflag>]
```

Response

```
TA deletes message from preferred message storage <mem1> location <index>.
```

```
OK
```

```
ERROR
```

If error is related to ME functionality:

```
+CMS ERROR:<err>
```

Reference

GSM 07.05

### Parameter

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

### Example

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

## 8.6. AT+CMGL List SMS Messages from Preferred Store

### AT+CMGL List SMS Messages from Preferred Store

Test Command	Response
AT+CMGL=?	<p>+CMGL: (list of supported &lt;stat&gt;s)</p> <p>OK</p>
Write Command AT+CMGL=<stat>[,<mode>]	<p>Response</p> <p>TA returns messages with status value &lt;stat&gt; from message storage &lt;mem1&gt; to the TE. If status of the message is 'received unread', status in the storage changes to 'received read'.</p> <p>1) If text mode (+CMGF=1) and command successful: for SMS-SUBMITs and/or SMS-DELIVERs: +CMGL: &lt;index&gt;,&lt;stat&gt;,&lt;oa/da&gt;,[&lt;alpha&gt;],[&lt;scts&gt;][,&lt;tooa/toda&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;[&lt;CR&gt;&lt;LF&gt; +CMGL: &lt;index&gt;,&lt;stat&gt;,&lt;da/oa&gt;,[&lt;alpha&gt;],[&lt;scts&gt;][,&lt;tooa/toda&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;[...]]</p> <p>for SMS-STATUS-REPORTs: +CMGL: &lt;index&gt;,&lt;stat&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;,&lt;dt&gt;,&lt;st&gt;[&lt;CR&gt;&lt;LF&gt; +CMGL: &lt;index&gt;,&lt;stat&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;,&lt;dt&gt;,&lt;st&gt;[...]]</p> <p>for SMS-COMMANDs: +CMGL: &lt;index&gt;,&lt;stat&gt;,&lt;fo&gt;,&lt;ct&gt;[&lt;CR&gt;&lt;LF&gt; +CMGL: &lt;index&gt;,&lt;stat&gt;,&lt;fo&gt;,&lt;ct&gt;[...]]</p> <p>for CBM storage: +CMGL:&lt;index&gt;,&lt;stat&gt;,&lt;sn&gt;,&lt;mid&gt;,&lt;page&gt;,&lt;pages&gt;&lt;CR&gt;&lt;LF&gt;&lt;data&gt;[&lt;CR&gt;&lt;LF&gt; +CMGL:</p>

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

## Parameter

<b>&lt;stat&gt;</b>	<p>1) If text mode</p> <p>"REC UNREAD" Received unread messages</p> <p>"REC READ" Received read messages</p> <p>"STO UNSENT" Stored unsent messages</p> <p>"STO SENT" Stored sent messages</p> <p>"ALL" All messages</p> <p>2) If PDU mode</p> <p>0 Received unread messages</p> <p>1 Received read messages</p> <p>2 Stored unsent messages</p> <p>3 Stored sent messages</p> <p>4 All messages</p>
<b>&lt;mode&gt;</b>	<p>0 Normal(default)</p> <p>1 Not change status of the specified SMS record</p>
<b>&lt;alpha&gt;</b>	String type alphanumeric representation of <da> or <oa> corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific; used character set should be the one selected with command select TE character set +CSCS (see definition of this command in TS 07.07)
<b>&lt;da&gt;</b>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (refer to command +CSCS in TS 07.07); type of address given by <toda>
<b>&lt;data&gt;</b>	<p>In the case of SMS: GSM 03.40 TP-User-Data in text mode responses; format</p> <ul style="list-style-type: none"> <li>- if &lt;dcs&gt; indicates that GSM 03.38 default alphabet is used and &lt;fo&gt; indicates that GSM 03.40 TPUser-Data-Header-Indication is not set</li> <li>- if TE character set other than "HEX" (refer to Command Select TE character set</li> </ul>

	<p><b>+CSCS</b> in TS 07.07):ME/TA converts GSM alphabet into current TE character set according to rules of Annex A</p> <ul style="list-style-type: none"> <li>- if TE character set is "HEX": ME/TA converts each 7-bit character of GSM alphabet into two IRA character long hexadecimal number (e.g. character P (GSM 23) is presented as 17 (IRA 49 and 55))</li> <li>- if <b>&lt;dcs&gt;</b> indicates that 8-bit or UCS2 data coding scheme is used, or <b>&lt;fo&gt;</b> indicates that GSM 03.40 TP-User-Data-Header-Indication is set: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))</li> </ul> <p>In the case of CBS: GSM 03.41 CBM Content of Message in text mode responses; format:</p> <ul style="list-style-type: none"> <li>- if <b>&lt;dcs&gt;</b> indicates that GSM 03.38 default alphabet is used</li> <li>- if TE character set other than "HEX" (refer to Command <b>+CSCS</b> in GSM 07.07): ME/TA converts GSM alphabet into current TE character set according to rules of Annex A</li> <li>- if TE character set is "HEX": ME/TA converts each 7-bit character of GSM alphabet into two IRA character long hexadecimal number</li> <li>- if <b>&lt;dcs&gt;</b> indicates that 8-bit or UCS2 data coding scheme is used: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number</li> </ul>
<b>&lt;length&gt;</b>	Integer type value indicating in the text mode ( <b>+CMGF=1</b> ) the length of the message body <b>&lt;data&gt;</b> (or <b>&lt;cdata&gt;</b> ) in characters; or in PDU mode ( <b>+CMGF=0</b> ), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)
<b>&lt;index&gt;</b>	Integer type; value in the range of location numbers supported by the associated memory
<b>&lt;oa&gt;</b>	GSM 03.40 TP-Originating-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (refer to command <b>+CSCS</b> in TS 07.07); type of address given by <b>&lt;tooa&gt;</b>
<b>&lt;pdu&gt;</b>	In the case of SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)). In the case of CBS: GSM 03.41 TPDU in hexadecimal format
<b>&lt;scts&gt;</b>	GSM 03.40 TP-Service-Center-Time-Stamp in time-string format (refer to <b>&lt;dt&gt;</b> )
<b>&lt;toda&gt;</b>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <b>&lt;da&gt;</b> is + (IRA 43) default value is 145, otherwise default value is 129)
<b>&lt;tooa&gt;</b>	GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (refer to <b>&lt;toda&gt;</b> )

**NOTE**

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

**Example**

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

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

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

OK
```

## 8.7. AT+CMGR Read SMS Message

### AT+CMGR Read SMS Message

Test Command	Response
<b>AT+CMGR=?</b>	<b>OK</b>
Write Command <b>AT+CMGR=&lt;index&gt;[,&lt;mode&gt;]</b>	<p>Response</p> <p>TA returns SMS message with location value <b>&lt;index&gt;</b> from message storage <b>&lt;mem1&gt;</b> to the TE. If status of the message is 'received unread', status in the storage changes to 'received read'.</p> <p>1) If text mode (<b>+CMGF=1</b>) and command is executed successfully: for SMS-DELIVER: <b>+CMGR:</b> <b>&lt;stat&gt;,&lt;oa&gt;,[&lt;alpha&gt;],&lt;scts&gt;[,&lt;tooa&gt;,&lt;fo&gt;,&lt;pid&gt;,&lt;dcs&gt;,&lt;sca&gt;,&lt;tosca&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;</b> for SMS-SUBMIT: <b>+CMGR:</b> <b>&lt;stat&gt;,&lt;da&gt;,[&lt;alpha&gt;][,&lt;toda&gt;,&lt;fo&gt;,&lt;pid&gt;,&lt;dcs&gt;,&lt;vp&gt;],&lt;sca&gt;,&lt;tosca&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;</b> for SMS-STATUS-REPORTs: <b>+CMGR:</b> <b>&lt;stat&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;,&lt;dt&gt;,&lt;st&gt;</b> for SMS-COMMANDs: <b>+CMGR:</b> <b>&lt;stat&gt;,&lt;fo&gt;,&lt;ct&gt;[,&lt;pid&gt;,[&lt;mn&gt;],[&lt;da&gt;],[&lt;toda&gt;],&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;cdata&gt;]</b> for CBM storage: <b>+CMGR:</b> <b>&lt;stat&gt;,&lt;sn&gt;,&lt;mid&gt;,&lt;dcs&gt;,&lt;page&gt;,&lt;pages&gt;&lt;CR&gt;&lt;LF&gt;&lt;data&gt;</b></p> <p>2) If PDU mode (<b>+CMGF=0</b>) and command successful:</p>



	<p><b>+CMGR: &lt;stat&gt;,[&lt;alpha&gt;],&lt;length&gt;&lt;CR&gt;&lt;LF&gt;&lt;pdu&gt;</b></p> <p><b>OK</b></p> <p>3) If error is related to ME functionality: <b>+CMS ERROR: &lt;err&gt;</b></p>
Reference GSM 07.05	

## Parameter

<b>&lt;index&gt;</b>	Integer type; value in the range of location numbers supported by the associated memory
<b>&lt;mode&gt;</b>	<p>0 Normal</p> <p>1 Not change the status of the specified SMS record</p>
<b>&lt;alpha&gt;</b>	String type alphanumeric representation of <b>&lt;da&gt;</b> or <b>&lt;oa&gt;</b> corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific
<b>&lt;da&gt;</b>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by <b>+CSCS</b> in TS 07.07); type of address given by <b>&lt;toda&gt;</b>
<b>&lt;data&gt;</b>	<p>In the case of SMS: GSM 03.40 TP-User-Data in text mode responses; format</p> <ul style="list-style-type: none"> <li>- if <b>&lt;dcs&gt;</b> indicates that GSM 03.38 default alphabet is used and <b>&lt;fo&gt;</b> indicates that GSM 03.40 TPUser-Data-Header-Indication is not set</li> <li>- if TE character set other than "HEX" (refer to command select TE character set <b>+CSCS</b> in TS 07.07):ME/TA converts GSM alphabet into current TE character set according to rules of Annex A</li> <li>- if TE character set is "HEX": ME/TA converts each 7-bit character of GSM alphabet into two IRA character long hexadecimal number (e.g. character P (GSM 23) is presented as 17 (IRA 49 and 55))</li> <li>- if <b>&lt;dcs&gt;</b> indicates that 8-bit or UCS2 data coding scheme is used, or <b>&lt;fo&gt;</b> indicates that GSM 03.40 TP-User-Data-Header-Indication is set: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))</li> </ul> <p>In the case of CBS: GSM 03.41 CBM Content of Message in text mode responses; format</p> <ul style="list-style-type: none"> <li>- if <b>&lt;dcs&gt;</b> indicates that GSM 03.38 default alphabet is used</li> <li>- if TE character set other than "HEX" (refer to command <b>+CSCS</b> in GSM 07.07): ME/TA converts GSM alphabet into current TE character set according to rules of Annex A</li> <li>- if TE character set is "HEX": ME/TA converts each 7-bit character of GSM alphabet into two IRA character long hexadecimal number</li> <li>- if <b>&lt;dcs&gt;</b> indicates that 8-bit or UCS2 data coding scheme is used: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number</li> </ul>
<b>&lt;dcs&gt;</b>	Depending on the command or result code: GSM 03.38 SMS Data Coding Scheme (default value is 0), or Cell Broadcast Data Coding Scheme in integer format

<b>&lt;fo&gt;</b>	Depending on the command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default value is 17), SMS-STATUS-REPORT, or SMS-COMMAND (default value is 2) in integer format																		
<b>&lt;length&gt;</b>	Integer type value indicating in the text mode ( <b>+CMGF=1</b> ) the length of the message body <b>&lt;data&gt;</b> (or <b>&lt;cdata&gt;</b> ) in characters; or in PDU mode ( <b>+CMGF=0</b> ), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)																		
<b>&lt;mid&gt;</b>	GSM 03.41 CBM Message Identifier in integer format																		
<b>&lt;oa&gt;</b>	GSM 03.40 TP-Originating-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted characters of the currently selected TE character set (specified by <b>+CSCS</b> in TS 07.07); type of address given by <b>&lt;tooa&gt;</b>																		
<b>&lt;pdu&gt;</b>	In the case of SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))  In the case of CBS: GSM 03.41 TPDU in hexadecimal format																		
<b>&lt;pid&gt;</b>	GSM 03.40 TP-Protocol-Identifier in integer format (default value is 0)																		
<b>&lt;sca&gt;</b>	GSM 04.11 RP SC address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by <b>+CSCS</b> in TS 07.07); type of address given by <b>&lt;tosca&gt;</b>																		
<b>&lt;scts&gt;</b>	GSM 03.40 TP-Service-Centre-Time-Stamp in time-string format (refer to <b>&lt;dt&gt;</b> )																		
<b>&lt;stat&gt;</b>	<table border="0"> <thead> <tr> <th>PDU mode</th> <th>text mode</th> <th>Explanation</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>"REC UNREAD"</td> <td>Received unread messages</td> </tr> <tr> <td>1</td> <td>"REC READ"</td> <td>Received read messages</td> </tr> <tr> <td>2</td> <td>"STO UNSENT"</td> <td>Stored unsent messages</td> </tr> <tr> <td>3</td> <td>"STO SENT"</td> <td>Stored sent messages</td> </tr> <tr> <td>4</td> <td>"ALL"</td> <td>All messages</td> </tr> </tbody> </table>	PDU mode	text mode	Explanation	0	"REC UNREAD"	Received unread messages	1	"REC READ"	Received read messages	2	"STO UNSENT"	Stored unsent messages	3	"STO SENT"	Stored sent messages	4	"ALL"	All messages
PDU mode	text mode	Explanation																	
0	"REC UNREAD"	Received unread messages																	
1	"REC READ"	Received read messages																	
2	"STO UNSENT"	Stored unsent messages																	
3	"STO SENT"	Stored sent messages																	
4	"ALL"	All messages																	
<b>&lt;toda&gt;</b>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <b>&lt;da&gt;</b> is + (IRA 43) default value is 145, otherwise default is 129)																		
<b>&lt;tooa&gt;</b>	GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (default refer to <b>&lt;toda&gt;</b> )																		
<b>&lt;tosca&gt;</b>	GSM 04.11 RP SC address Type-of-Address octet in integer format (default refer to <b>&lt;toda&gt;</b> )																		
<b>&lt;vp&gt;</b>	Depending on SMS-SUBMIT <b>&lt;fo&gt;</b> setting: GSM 03.40 TP-Validity-Period either in integer format (default value is 167) or in time-string format (refer to <b>&lt;dt&gt;</b> )																		

### Example

```
+CMTI: "SM",3 // Indicates that new message has been received and saved
                to <index>=3 of "SM"
AT+CMGR=3 // Read message
+CMGR: "REC UNREAD","+8615021012496","","2010/09/25 15:06:37+32",145,4,0,241,"+8
613800210500",145,27
This is a test from Quectel
```

OK

## 8.8. AT+CMGS Send SMS Message

### AT+CMGS Send SMS Message

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

### Parameter

<b>&lt;da&gt;</b>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by <b>+CSCS</b> in TS 07.07); type of address given by <b>&lt;toda&gt;</b>
<b>&lt;toda&gt;</b>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <b>&lt;da&gt;</b> is + (IRA 43) default value is 145, otherwise default value is 129)
<b>&lt;length&gt;</b>	Integer type value indicating in the text mode ( <b>+CMGF=1</b> ) the length of the message body <b>&lt;data&gt;</b> (or <b>&lt;cdata&gt;</b> ) in characters; or in PDU mode ( <b>+CMGF=0</b> ), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)
<b>&lt;mr&gt;</b>	GSM 03.40 TP-Message-Reference in integer format

### Example

```

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

```

## 8.9. AT+CMGW Write SMS Message to Memory

### AT+CMGW Write SMS Message to Memory

Test Command	Response
<b>AT+CMGW=?</b>	<b>OK</b>
Write Command 1) If text mode (+CMGF=1): <b>AT+CMGW[=&lt;oa/da&gt;[,&lt;tooa/toda&gt;[,&lt;stat&gt;]]]</b> <CR> <b>text is entered</b> <ctrl-Z/ESC> <ESC> quits without sending  2) If PDU mode (+CMGF=0): <b>AT+CMGW=&lt;length&gt;[,&lt;stat&gt;]&lt;CR&gt;</b> <b>PDU is given &lt;ctrl-Z/ESC&gt;</b>	Response TA transmits SMS message (either SMS-DELIVER or SMS-SUBMIT) from TE to memory storage <b>&lt;mem2&gt;</b> . Memory location <b>&lt;index&gt;</b> of the stored message is returned. By default message status will be set to 'stored unsent', but parameter <b>&lt;stat&gt;</b> also allows other status values to be given.  If writing is successful: <b>+CMGW: &lt;index&gt;</b>  <b>OK</b>  If error is related to ME functionality: <b>+CMS ERROR: &lt;err&gt;</b>
Reference GSM 07.05	

### Parameter

<b>&lt;oa&gt;</b>	GSM 03.40 TP-Originating-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by <b>+CSCS</b> in TS 07.07);type of address given by <b>&lt;tooa&gt;</b>
<b>&lt;da&gt;</b>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE

	character set (specified by <b>+CSCS</b> in TS 07.07); type of address given by <b>&lt;todoa&gt;</b>																		
<b>&lt;tooa&gt;</b>	GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (default refer to <b>&lt;todoa&gt;</b> )																		
<b>&lt;todoa&gt;</b>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <b>&lt;da&gt;</b> is + (IRA 43) default value is 145, otherwise default value is 129) 129 Unknown type(ISDN format number) 145 International number type(ISDN format )																		
<b>&lt;stat&gt;</b>	<table border="0"> <thead> <tr> <th>PDU mode</th> <th>text mode</th> <th>Explanation</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>"REC UNREAD"</td> <td>Received unread messages</td> </tr> <tr> <td>1</td> <td>"REC READ"</td> <td>Received read messages</td> </tr> <tr> <td>2</td> <td>"STO UNSENT"</td> <td>Stored unsent messages</td> </tr> <tr> <td>3</td> <td>"STO SENT"</td> <td>Stored sent messages</td> </tr> <tr> <td>4</td> <td>"ALL"</td> <td>All messages</td> </tr> </tbody> </table>	PDU mode	text mode	Explanation	0	"REC UNREAD"	Received unread messages	1	"REC READ"	Received read messages	2	"STO UNSENT"	Stored unsent messages	3	"STO SENT"	Stored sent messages	4	"ALL"	All messages
PDU mode	text mode	Explanation																	
0	"REC UNREAD"	Received unread messages																	
1	"REC READ"	Received read messages																	
2	"STO UNSENT"	Stored unsent messages																	
3	"STO SENT"	Stored sent messages																	
4	"ALL"	All messages																	
<b>&lt;length&gt;</b>	Integer type value indicating in the text mode ( <b>+CMGF=1</b> ) the length of the message body <b>&lt;data&gt;</b> (or <b>&lt;cdata&gt;</b> ) in characters; or in PDU mode ( <b>+CMGF=0</b> ), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)																		
<b>&lt;pdu&gt;</b>	In the case of SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))  In the case of CBS: GSM 03.41 TPDU in hexadecimal format																		
<b>&lt;index&gt;</b>	Index of message in selected storage <b>&lt;mem2&gt;</b>																		

### Example

```

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

```

## 8.10. AT+CMSS Send SMS Message from Storage

### AT+CMSS Send SMS Message from Storage

Test Command	Response
<b>AT+CMSS=?</b>	<b>OK</b>
Write Command	Response

<b>AT+CMSS=&lt;index&gt;[,&lt;da&gt;[,&lt;toda&gt;]]</b>	<p>TA sends message with location value <b>&lt;index&gt;</b> from message storage <b>&lt;mem2&gt;</b> to the network (SMS-SUBMIT). If new recipient address <b>&lt;da&gt;</b> is given, it shall be used instead of the one stored with the message. Reference value <b>&lt;mr&gt;</b> is returned to the TE on successful message delivery. Values can be used to identify message upon unsolicited delivery status report result code.</p> <p>1) If text mode (<b>+CMGF=1</b>) and sent successfully: <b>+CMSS: &lt;mr&gt; [,&lt;scts&gt;]</b></p> <p><b>OK</b></p> <p>2) If PDU mode(<b>+CMGF=0</b>) and sent successfully; <b>+CMSS: &lt;mr&gt; [,&lt;ackpdu&gt;]</b></p> <p><b>OK</b></p> <p>3) If error is related to ME functionality: <b>+CMS ERROR: &lt;err&gt;</b></p>
Reference GSM 07.05	

### Parameter

<b>&lt;index&gt;</b>	Integer type; value in the range of location numbers supported by the associated memory
<b>&lt;da&gt;</b>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by <b>+CSCS</b> in TS 07.07); type of address given by <b>&lt;toda&gt;</b>
<b>&lt;toda&gt;</b>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <b>&lt;da&gt;</b> is + (IRA 43) default value is 145, otherwise default value is 129)
<b>&lt;mr&gt;</b>	GSM 03.40 TP-Message-Reference in integer format
<b>&lt;scts&gt;</b>	GSM 03.40 TP-Service-Centre-Time-Stamp in time-string format (refer to <b>&lt;dt&gt;</b> )
<b>&lt;ackpdu&gt;</b>	In the case of SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)). In the case of CBS: GSM 03.41 TPDU in hexadecimal format

## 8.11. AT+CMGC Send SMS Command

AT+CMGC Send SMS Command	
Test Command	Response

<b>AT+CMGC=?</b>	<b>OK</b>
<p>Write Command</p> <p>1) If text mode (<b>+CMGF=1</b>): <b>AT+CMGC=&lt;fo&gt;[,&lt;ct&gt;,&lt;pid&gt;,&lt;mn&gt;,&lt;da&gt;,&lt;toda&gt;]&lt;CR&gt;</b> <b>text is entered</b> &lt;ctrl-Z/ESC&gt; ESC quits without sending</p> <p>2) If PDU mode (<b>+CMGF=0</b>): <b>AT+CMGC=&lt;length&gt;&lt;CR&gt;</b> <b>PDU is given</b> &lt;ctrl-Z/ESC&gt;</p>	<p>Response</p> <p>TA transmits SMS command message from a TE to the network (SMS-COMMAND). Message reference value <b>&lt;mr&gt;</b> is returned to the TE on successful message delivery. Value can be used to identify message upon unsolicited delivery status report result code.</p> <p>1) If text mode(<b>+CMGF=1</b>) and sent successfully: <b>+CMGC: &lt;mr&gt; [,&lt;scts&gt;]</b></p> <p><b>OK</b></p> <p>2) If PDU mode(<b>+CMGF=0</b>) and sent successfully: <b>+CMGC: &lt;mr&gt; [,&lt;ackpdu&gt;]</b></p> <p><b>OK</b></p> <p>3)If error is related to ME functionality: <b>+CMS ERROR: &lt;err&gt;</b></p>
Reference GSM 07.05	

## Parameter

<b>&lt;fo&gt;</b>	First octet of GSM 03.40 SMS-COMMAND (default value is 2) in integer format
<b>&lt;ct&gt;</b>	GSM 03.40 TP-Command-Type in integer format (default value is 0)
<b>&lt;pid&gt;</b>	GSM 03.40 TP-Protocol-Identifier in integer format (default value is 0)
<b>&lt;mn&gt;</b>	GSM 03.40 TP-Message-Number in integer format
<b>&lt;da&gt;</b>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by <b>+CSCS</b> in TS 07.07); type of address given by <b>&lt;toda&gt;</b>
<b>&lt;toda&gt;</b>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <b>&lt;da&gt;</b> is + (IRA 43) default value is 145, otherwise default value is 129) 129 Unknown type(ISDN format number) 145 International number type(ISDN format )
<b>&lt;length&gt;</b>	Integer type value indicating in PDU mode ( <b>+CMGF=0</b> ), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)
<b>&lt;mr&gt;</b>	GSM 03.40 TP-Message-Reference in integer format
<b>&lt;scts&gt;</b>	GSM 03.40 TP-Service-Centre-Time-Stamp in time-string format (refer to <b>&lt;dt&gt;</b> )
<b>&lt;ackpdu&gt;</b>	In the case of SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)). In the case of CBS: GSM 03.41 TPDU in hexadecimal format

## 8.12. AT+CNMI New SMS Message Indications

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

### Parameter

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



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

**NOTE**

Unsolicited result code

**+CMTI: <mem>,<index>**

Indicates that new message has been received

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

Short message is output directly

**+CBM: <length><CR><LF><pdu>**

Cell broadcast message is output directly

**Example**

```

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

```

OK

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

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

### 8.13. AT+CRES Restore SMS Settings

#### AT+CRES Restore SMS Settings

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

#### Parameter

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

### 8.14. AT+CSAS Save SMS Settings

#### AT+CSAS Save SMS Settings

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

### Parameter

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

## 8.15. AT+CSCB    Select Cell Broadcast SMS Messages

### AT+CSCB    Select Cell Broadcast SMS Messages

Test Command <b>AT+CSCB=?</b>	Response <b>+CSCB:</b> (list of supported <b>&lt;mode&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CSCB?</b>	Response <b>+CSCB:</b> <b>&lt;mode&gt;</b> , <b>&lt;mids&gt;</b> , <b>&lt;dcss&gt;</b>  <b>OK</b>
Write Command <b>AT+CSCB=&lt;mode&gt;[,&lt;mids&gt;[,&lt;dcss&gt;]]</b>	Response TA selects which types of CBMs are to be received by the ME. <b>OK</b> If error is related to ME functionality: <b>+CMS ERROR: &lt;err&gt;</b>
Reference GSM 07.05	

## Parameter

<b>&lt;mode&gt;</b>	0	Message types specified in <b>&lt;mids&gt;</b> and <b>&lt;dcss&gt;</b> are accepted
	1	Message types specified in <b>&lt;mids&gt;</b> and <b>&lt;dcss&gt;</b> are not accepted
<b>&lt;mids&gt;</b>	String type; all different possible combinations of CBM message identifiers (refer to <b>&lt;mid&gt;</b> ) (default is empty string) e.g. "0,1,5,320-478,922"	
<b>&lt;dcss&gt;</b>	String type; all different possible combinations of CBM data coding schemes (refer to <b>&lt;dcs&gt;</b> ) (default is empty string) e.g. "0-3,5"	

### NOTE

The Command writes the parameters in NON-VOLATILE memory.

## 8.16. AT+CSDH Show SMS Text Mode Parameters

### AT+CSDH Show SMS Text Mode Parameters

Test Command <b>AT+CSDH=?</b>	Response <b>+CSDH:</b> (list of supported <b>&lt;show&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CSDH?</b>	Response <b>+CSDH:</b> <b>&lt;show&gt;</b>  <b>OK</b>
Write Command <b>AT+CSDH=[&lt;show&gt;]</b>	Response TA determines whether detailed header information is shown in text mode result codes.  <b>OK</b>
Reference GSM 07.05	

## Parameter

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

### Example

```

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

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

OK

```

## 8.17. AT+CSMP Set SMS Text Mode Parameters

### AT+CSMP Set SMS Text Mode Parameters

Test Command <b>AT+CSMP=?</b>	Response <b>+CSMP:</b> (list of supported <b>&lt;fo&gt;</b> s), (list of supported <b>&lt;vp&gt;</b> s), (list of supported <b>&lt;pid&gt;</b> s), (list of supported <b>&lt;dc&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CSMP?</b>	Response <b>+CSMP:</b> <b>&lt;fo&gt;</b> , <b>&lt;vp&gt;</b> , <b>&lt;pid&gt;</b> , <b>&lt;dc&gt;</b>  <b>OK</b>
Write Command <b>AT+CSMP=[&lt;fo&gt;[,&lt;vp&gt;[,&lt;pid&gt;[,&lt;dc&gt;] ]]]</b>	Response TA selects values for additional parameters needed when SM is sent to the network or placed in a storage when text mode is selected ( <b>+CMGF=1</b> ). It is possible to set the validity period starting from when the SM is received by the SMSC ( <b>&lt;vp&gt;</b> is in range 0... 255) or define the absolute time of the validity period termination ( <b>&lt;vp&gt;</b> is a string).  <b>OK</b>
Reference GSM 07.05	

## Parameter

<b>&lt;fo&gt;</b>	Depending on the Command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default value is 17), SMS-STATUS-REPORT, or SMS-COMMAND (default value is 2) in integer format. SMS status report is supported under text mode if <b>&lt;fo&gt;</b> is set to 49
<b>&lt;vp&gt;</b>	Depending on SMS-SUBMIT <b>&lt;fo&gt;</b> setting: GSM 03.40 TP-Validity-Period either in integer format (default 167) or in time-string format (refer to <b>&lt;dt&gt;</b> )
<b>&lt;pid&gt;</b>	GSM 03.40 TP-Protocol-Identifier in integer format (default value is 0)
<b>&lt;dc&gt;</b>	GSM 03.38 SMS Data Coding Scheme in Integer format

### NOTE

The Command writes the parameters in NON-VOLATILE memory.

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

### SMS

#### AT+QCLASS0 Store Class 0 SMS to SIM when Receiving Class 0 SMS

Test Command <b>AT+QCLASS0=?</b>	Response <b>+QCLASS0:</b> (list of supported <b>&lt;mode&gt;</b> s)  <b>OK</b>
Read Command <b>AT+QCLASS0?</b>	Response <b>+QCLASS0:</b> <b>&lt;mode&gt;</b>  <b>OK</b>
Write Command <b>AT+QCLASS0=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

## Parameter

<b>&lt;mode&gt;</b>	<u>0</u>	Disable to store Class 0 SMS when receiving Class 0 SMS
	1	Enable to store Class 0 SMS when receiving Class 0 SMS

## Example

For example message in text mode:

**AT+CPMS?**

**+CPMS: "SM",6,50,"SM",6,50,"SM",6,50**

OK

**AT+QCLASS0=0**

// Disable to store SMS when receiving Class 0 SMS

OK

**+CMT: "+8615021012496",,"2010/09/26 09:55:37+32"**

TEST1 from Quectel

// Short message is output directly

**AT+QCLASS0=1**

// Enable to store SMS when receiving Class 0 SMS

OK

**+CMTI: "SM",7**

// Indicate that new message has been received

**AT+CMGR=7**

**+CMGR: "REC UNREAD","+8615021012496",,"2010/09/26 09:56:17+32"**

TEST2 from Quectel

OK

## 8.19. AT+QMGDA Delete all SMS

### AT+QMGDA Delete all SMS

Test Command

**AT+QMGDA=?**

Response

**+QMGDA:** (listed of supported <type>s)

OK

Write Command

**AT+QMGDA=<type>**

Response

OK

ERROR

**+CME ERROR:** <err>

Reference

### Parameter

<type>

1) If text mode:

"DEL READ" Delete all read messages

"DEL UNREAD" Delete all unread messages

"DEL SENT" Delete all sent SMS

"DEL UNSENT"	Delete all unsend SMS
"DEL INBOX"	Delete all received SMS
"DEL ALL"	Delete all SMS
2) If PDU mode:	
1	Delete all read messages
2	Delete all unread messages
3	Delete all sent SMS
4	Delete all unsend SMS
5	Delete all received SMS
6	Delete all SMS

## 8.20. AT+QSMSCODE Configure SMS Code Mode

### AT+QSMSCODE Configure SMS Code Mode

Test Command <b>AT+QSMSCODE=?</b>	Response <b>+QSMSCODE:</b> (list of supported <mode>s)  <b>OK</b>
Read Command <b>AT+QSMSCODE?</b>	Response <b>+QSMSCODE:</b> <mode>  <b>OK</b>
Write Command <b>AT+QSMSCODE=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

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



# 9 Phonebook Commands

## 9.1. AT+CPBS Select Phonebook Memory Storage

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

### Parameter

<b>&lt;storage&gt;</b>	"MC"	ME missed (unanswered) calls list
	"RC"	ME received calls list
	"DC"	ME dialed calls list( <b>+CPBW</b> may not be applicable or this storage)(same as LD)
	"LA"	Last Number All list (LND/LNM/LNR)
	"ME"	ME phonebook
	"BN"	SIM barred dialed number
	"SD"	SIM service dial number
	"VM"	SIM voice mailbox
	"FD"	SIM fix dialing-phone book
	"LD"	SIM last-dialing-phone book
	"ON"	SIM (or ME) own numbers (MSISDNs) list
	"SM"	SIM phonebook
	<b>&lt;used&gt;</b>	Integer type value indicating the total number of used locations in selected memory
<b>&lt;total&gt;</b>	Integer type value indicating the total number of locations in selected memory	

**NOTE**

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

## 9.2. AT+CPBW Write Phonebook Entry

### AT+CPBW Write Phonebook Entry

<p>Test Command <b>AT+CPBW=?</b></p>	<p>Response</p> <p>TA returns location range supported by the current storage, the maximum length of <b>&lt;number&gt;</b> field, supported number formats of the storage, and the maximum length of <b>&lt;text&gt;</b> field.</p> <p><b>+CPBW:</b> (The range of supported <b>&lt;index&gt;</b>s), <b>&lt;nlength&gt;</b>, (list of supported <b>&lt;type&gt;</b>s), <b>&lt;tlength&gt;</b></p> <p><b>OK</b></p>
<p>Write Command <b>AT+CPBW=[&lt;index1&gt;][,&lt;number&gt;[,&lt;type&gt;[,&lt;text&gt;]]]</b></p>	<p>Response</p> <p>TA writes phone book entry in location number <b>&lt;index&gt;</b> in the current phone book memory storage selected with <b>+CPBS</b>. Entry fields written are phone number <b>&lt;number&gt;</b> (in the format <b>&lt;type&gt;</b>) and text <b>&lt;text&gt;</b> associated with the number. If those fields are omitted, phone book entry is deleted. If <b>&lt;index&gt;</b> is left out, but <b>&lt;number&gt;</b> is given, entry is written to the first free location in the phone book.</p> <p><b>OK</b></p>
<p>Reference GSM 07.07</p>	

### Parameter

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

**NOTE**

The following characters in **<text>** must be entered via the escape sequence:

GSM char	Seq.Seq.(hex)	Note
\	\5C 5C 35 43	(backslash)
"	\22 5C 32 32	(string delimiter)
BSP	\08 5C 30 38	(backspace)
NULL	\00 5C 30 30	(GSM null)

'0' (GSM null) may cause problems for application layer software when reading string lengths.

**Example**

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

**9.3. AT+CPBR Read Current Phonebook Entries**

<b>AT+CPBR Read Current Phonebook Entries</b>	
Test Command <b>AT+CPBR=?</b>	Response TA returns location range supported by the current storage as a compound value and the maximum lengths of <b>&lt;number&gt;</b> and <b>&lt;text&gt;</b> fields. <b>+CPBR:</b> (list of supported <b>&lt;index&gt;</b> s), <b>&lt;nlength&gt;</b> , <b>&lt;tlength&gt;</b>  <b>OK</b>
Write Command <b>AT+CPBR=&lt;index1&gt;[,&lt;index2&gt;]</b>	Response TA returns phone book entries in location number range <b>&lt;index1&gt;... &lt;index2&gt;</b> from the current phone book memory storage selected with <b>+CPBS</b> . If <b>&lt;index2&gt;</b> is left out, only location <b>&lt;index1&gt;</b> is returned. <b>+CPBR:&lt;index1&gt;,&lt;number&gt;,&lt;type&gt;,&lt;text&gt;[&lt;CR&gt;&lt;LF&gt;+CPBR: .....+CPBR: &lt;index2&gt;, &lt;number&gt;, &lt;type&gt;, &lt;text&gt;]</b>  <b>OK</b>
Reference GSM 07.07	

## Parameter

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

## Example

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

## 9.4. AT+CPBF Find Phonebook Entries

### AT+CPBF Find Phonebook Entries

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

## Parameter

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

## 9.5. AT+CNUM Subscriber Number

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

## Parameter

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

---

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

---

# 10 GPRS Commands

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

### AT+CGATT Attach to/Detach from GPRS Service

Test Command <b>AT+CGATT=?</b>	Response <b>+CGATT:</b> (list of supported <b>&lt;state&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CGATT?</b>	Response <b>+CGATT:</b> <b>&lt;state&gt;</b>  <b>OK</b>
Write Command <b>AT+CGATT=&lt;state&gt;</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;state&gt;</b>	Indicates the state of GPRS attachment
0	Detached
1	Attached
Other values are reserved and will result in an <b>ERROR</b> response to the Write Command	

### Example

```

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

OK

## 10.2. AT+CGDCONT Define PDP Context

AT+CGDCONT Define PDP Context	
Test Command AT+CGDCONT=?	Response +CGDCONT: (range of supported <cid>s), <PDP_type>, <APN>, <PDP_addr>, (list of supported <data_comp>s), (list of supported <head_comp>s)  OK
Read Command AT+CGDCONT?	Response +CGDCONT: <cid>,<PDP_type>,<APN>,<PDP_addr>,<data_comp>,<head_comp> <CR><LF>+CGDCONT: <cid>,<PDP_type>,<APN>,<PDP_addr>,<data_comp>,<head_comp> ...  OK
Write Command AT+CGDCONT=<cid>[,<PDP_type>[,<APN>[,<PDP_addr>[,<d_comp>[,<h_comp>]]]]]	Response OK ERROR
Reference GSM 07.07	

### Parameter

- <cid>** (PDP Context Identifier) a numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value=1) is returned by the test form of the command
- <PDP\_type>** (Packet Data Protocol type) a string parameter which specifies the type of packet data protocol X25 ITU-T/CCITT X.25 layer 3 IP Internet Protocol (IETF STD 5) OSPFH Internet Hosted Octet Stream Protocol PPP Point to Point Protocol (IETF STD 51)
- <APN>** (Access Point Name) a string parameter that is a logical name that is used to select the GGSN or the external packet data network. If the value is null or omitted, then the subscription value will be requested
- <PDP\_addr>** A string parameter identifies the MT in the address space applicable to the PDP. If the value



is null or omitted, then a value may be provided by the TE during the PDP startup procedure or, failing that, a dynamic address will be requested. The allocated address may be read using the **+CGPADDR** command

**<d\_comp>** A numeric parameter that controls PDP data compression  
0 off (default if value is omitted)  
Other values are reserved

**<h\_comp>** A numeric parameter that controls PDP header compression  
0 off (default if value is omitted)  
Other values are reserved

### Example

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

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

### AT+CGQREQ Quality of Service Profile (Requested)

Test Command <b>AT+CGQREQ=?</b>	Response <b>+CGQREQ:</b> <PDP_type>,(list of supported <precedence>s), (list of supported <delay>s),(list of supported <reliability>s), (list of supported <peak>s),(list of supported <mean>s)  <b>OK</b>
Read Command <b>AT+CGQREQ?</b>	Response <b>+CGQREQ:</b> <cid>,<precedence>,<delay>,>reliability>,<peak>,<mean > <CR><LF> <b>+CGQREQ:</b> <cid>,<precedence>,<delay>,<reliability>,<peak >,<mean > ...  <b>OK</b>
Write Command <b>AT+CGQREQ=&lt;cid&gt;[,&lt;precedence&gt;[,&lt;delay&gt;[,&lt;reliability&gt;[,&lt;peak&gt;[,&lt;mean&gt;]]]]]</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

## Parameter

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

The following parameter are defined in GSM 03.60

**<precedence>** A numeric parameter which specifies the precedence class

**<delay>** A numeric parameter which specifies the delay class

**<reliability>** A numeric parameter which specifies the reliability class

**<peak>** A numeric parameter which specifies the peak throughput class

**<mean>** A numeric parameter which specifies the mean throughput class

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

### AT+CGQMIN Quality of Service Profile (Minimum Acceptable)

Test Command <b>AT+CGQMIN=?</b>	Response <b>+CGQMIN: &lt;PDP_type&gt;</b> , (list of supported <b>&lt;precedence&gt;</b> s), (list of supported <b>&lt;delay&gt;</b> s), (list of supported <b>&lt;reliability&gt;</b> s), (list of supported <b>&lt;peak&gt;</b> s), (list of supported <b>&lt;mean&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CGQMIN?</b>	Response <b>+CGQMIN:</b> <b>&lt;cid&gt;</b> , <b>&lt;precedence&gt;</b> , <b>&lt;delay&gt;</b> , <b>&lt;reliability&gt;</b> , <b>&lt;peak&gt;</b> , <b>&lt;mean&gt;</b> <b>&gt;</b> <b>&lt;CR&gt;&lt;LF&gt;+CGQMIN:</b> <b>&lt;cid&gt;</b> , <b>&lt;precedence&gt;</b> , <b>&lt;delay&gt;</b> , <b>&lt;reliability&gt;</b> , <b>&lt;peak&gt;</b> , <b>&lt;mean&gt;</b> <b>&gt;</b> ...  <b>OK</b>
Write Command <b>AT+CGQMIN=&lt;cid&gt;[,&lt;precedence&gt;[,&lt;delay&gt;[,&lt;reliability&gt;[,&lt;peak&gt;[,&lt;mean&gt;]]]]]</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

## Parameter

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

The following parameters are defined in GSM 03.60.

<b>&lt;precedence&gt;</b>	A numeric parameter which specifies the precedence class
<b>&lt;delay&gt;</b>	A numeric parameter which specifies the delay class
<b>&lt;reliability&gt;</b>	A numeric parameter which specifies the reliability class
<b>&lt;peak&gt;</b>	A numeric parameter which specifies the peak throughput class
<b>&lt;mean&gt;</b>	A numeric parameter which specifies the mean throughput class

## 10.5. AT+CGACT PDP Context Activate or Deactivate

### AT+CGACT PDP Context Activate or Deactivate

Test Command <b>AT+CGACT=?</b>	Response <b>+CGACT:</b> (list of supported <b>&lt;state&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CGACT?</b>	Response <b>+CGACT:</b> <b>&lt;cid&gt;,&lt;state&gt;[&lt;CR&gt;&lt;LF&gt;+CGACT:&lt;cid&gt;&lt;state&gt;...]</b>  <b>OK</b>
Write Command <b>AT+CGACT=&lt;state&gt;,&lt;cid&gt;</b>	Response <b>OK</b> <b>NO CARRIER</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

#### Parameter

<b>&lt;state&gt;</b>	Indicates the state of PDP context activation 0 Deactivated 1 Activated Other values are reserved and will result in an <b>ERROR</b> response to the Write Command
<b>&lt;cid&gt;</b>	A numeric parameter which specifies a particular PDP context definition (see <b>+CGDCONT</b> command)

#### NOTE

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

### Example

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

## 10.6. AT+CGDATA Enter Data State

### AT+CGDATA Enter Data State

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

### Parameter

<L2P>	A string parameter that indicates the layer 2 protocol to be used between the TE and MT: PPP – Point to Point protocol for a PDP such as IP Other values are not supported and will result in an <b>ERROR</b> response to the execution command
<cid>	A numeric parameter which specifies a particular PDP context definition (see +CGDCONT command)

## 10.7. AT+CGPADDR Show PDP Address

### AT+CGPADDR Show PDP Address

Test Command AT+CGPADDR=?	Response +CGPADDR: (list of defined <cid>s)
------------------------------	------------------------------------------------

	OK
Write Command <b>AT+CGPADDR=&lt;cid&gt;</b>	Response <b>+CGPADDR: &lt;cid&gt;,&lt;PDP_addr&gt;</b>
	OK ERROR
Reference GSM 07.07	

## Parameter

- <cid>** A numeric parameter which specifies a particular PDP context definition (see **+CGDCONT** command)
- <PDP\_addr>** A string that identifies the MT in the address space applicable to the PDP. The address may be static or dynamic. For a static address, it will be the one set by the **+CGDCONT** command when the context was defined. For a dynamic address it will be the one assigned during the last PDP context activation that used the context definition referred to **<cid>**. **<PDP\_address>** is omitted if none is available

### NOTE

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

## Example

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

## 10.8. AT+CGCLASS GPRS Mobile Station Class

### AT+CGCLASS GPRS Mobile Station Class

Test Command <b>AT+CGCLASS=?</b>	Response <b>+CGCLASS: (list of supported &lt;class&gt;s)</b>
-------------------------------------	-----------------------------------------------------------------

	OK
Read Command <b>AT+CGCLASS?</b>	Response <b>+CGCLASS: &lt;class&gt;</b>
	OK
Write Command <b>AT+CGCLASS=&lt;class&gt;</b>	Response OK ERROR If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

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

## 10.9. AT+CGEREP Control Unsolicited GPRS Event Reporting

### AT+CGEREP Control Unsolicited GPRS Event Reporting

Test Command <b>AT+CGEREP=?</b>	Response <b>+CGEREP: (list of supported &lt;mode&gt;s)</b>
	OK
Read Command <b>AT+CGEREP?</b>	Response <b>+CGEREP: &lt;mode&gt;</b>
	OK
Write Command <b>AT+CGEREP=&lt;mode&gt;</b>	Response OK ERROR
Reference GSM 07.07	

## Parameter

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

### NOTE

Unsolicited Result Codes supported:

**+CGEV: NW DEACT <PDP\_type>, <PDP\_addr>[,<cid>]**

**+CGEV: ME DEACT <PDP\_type>, <PDP\_addr>[,<cid>]**

**+CGEV: NW DETACH**

**+CGEV: ME CLASS <class>**

Parameters

**<PDP\_type>** Packet Data Protocol type (see **+CGDCONT** command)

**<PDP\_addr>** Packet Data Protocol address (see **+CGDCONT** command)

**<cid>** Context ID (see **+CGDCONT** command)

**<class>** GPRS mobile class (see **+CGCLASS** command)

## 10.10. AT+CGREG Network Registration Status

### AT+CGREG Network Registration Status

Test Command <b>AT+CGREG=?</b>	Response <b>+CGREG:</b> (list of supported <n>s)  <b>OK</b>
Read Command <b>AT+CGREG?</b>	Response <b>+CGREG:</b> <n>,<stat>[,<lac>,<ci>]  <b>OK</b>
Write Command <b>AT+CGREG=[&lt;n&gt;]</b>	Response <b>OK</b> <b>ERROR</b>
Reference GSM 07.07	

## Parameter

<b>&lt;n&gt;</b>	<u>0</u>	Disable network registration unsolicited result code
	1	Enable network registration unsolicited result code <b>+CGREG:&lt;stat&gt;</b>

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

**NOTE**

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

**Example**

```
AT+CGATT=0
NO CARRIER

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

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

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

**10.11. AT+CGSMS Select Service for MO SMS Messages**

**AT+CGSMS Select Service for MO SMS Messages**

Test Command <b>AT+CGSMS=?</b>	Response <b>+CGSMS:</b> (list of currently available <b>&lt;service&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CGSMS?</b>	Response <b>+CGSMS:</b> <b>&lt;service&gt;</b>  <b>OK</b>
Write Command	Response



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

### Parameter

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

**NOTE**

The circuit switched service route is the default method.

## 10.12. AT+QGPCLASS Change GPRS Multi-slot Class

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

### Parameter

<b>&lt;class&gt;</b>	GPRS multi-slot class
----------------------	-----------------------

**NOTES**

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

# 11 TCPIP Commands

## 11.1. AT+QIOPEN Start up TCP or UDP Connection

### AT+QIOPEN Start up TCP or UDP Connection

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

### Parameter

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

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

**NOTES**

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

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

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

## Parameter

<b>&lt;index&gt;</b>	The index of the socket for sending data. This parameter is necessary only if <b>AT+QIMUX</b> was set as 1 (refer to <b>AT+QIMUX</b> ). When <b>AT+QIMUX</b> was set as 0, the parameter MUST be omitted
<b>&lt;length&gt;</b>	A numeric parameter which indicates the length of data to be sent, it MUST be less than 1460

## NOTES

1. This command is used to send data on the TCP or UDP connection that has been established already. Ctrl+Z is used as a termination symbol. ESC is used to cancel sending data.
2. The maximum length of the data to input at a time is 1460.
3. This command is invalid when QIMUX is 1 (refer to **AT+QIMUX**).
4. There are at most 1460 bytes that can be sent each time.
5. Only send data at the status of connection, otherwise respond with **ERROR**.
6. **SEND OK** means the data have been put into the send window to send rather than it has received the ACK message for the data from the remote node. To check whether the data has been sent to the remote note, it is necessary to execute the command **AT+QISACK** to query it.

## 11.3. AT+QICLOSE Close TCP or UDP Connection

### AT+QICLOSE Close TCP or UDP Connection

Test Command <b>AT+QICLOSE=?</b>	Response <b>OK</b>
Execution Command <b>AT+QICLOSE</b>	Response If close succeeds: <b>CLOSE OK</b> If close fails: <b>ERROR</b>
Write Command <b>AT+QICLOSE=&lt;index&gt;</b>	Response If close succeeds: <b>&lt;index&gt;, CLOSE OK</b> If close fails: <b>ERROR</b>
Reference	

## Parameter

<b>&lt;index&gt;</b>	The index of the socket for sending data. This parameter is necessary only if <b>AT+QIMUX</b>
----------------------	-----------------------------------------------------------------------------------------------

was set as 1 (refer to **AT+QIMUX**). When **AT+QIMUX** was set as 0, the parameter MUST be omitted

## NOTES

1. Execution Command **AT+QICLOSE**:
  - If QISRVC is 1 (please refer to **AT+QISRVC**) and QIMUX is 0 (please refer to **AT+QIMUX**), this command will close the connection in which the module is used as a client.
  - If QISRVC is 1 and QIMUX is 1, it will return **ERROR**.
  - If QISRVC is 2 and QIMUX equals 0 and the module is used as a server and some clients have been connected to it, this command will close the connection between the module and the remote client.
  - If QISRVC is 2 and QIMUX is 0 and the module is in listening state without any client, this command will cause the module to quit the listening state.
  - If QISRVC is 2 and QIMUX is 1 and the module is used as a server, this command will close all the income connection and cause the module to quit the listening state.
2. Write Command **AT+QICLOSE=<index>**:
  - This command is valid only if QIMUX is 1.
  - If QISRVC is 1 and QIMUX is 1, this command will close the corresponding connection according to **<index>** and the module used as a client in the connection.
  - If QISRVC is 2 and QIMUX is 1, this command will close the incoming connection according to **<index>**.
3. If QISRVC is 1 and QIMUX is 0, **AT+QICLOSE** only closes the connection when the statue is CONNECTING or CONNECT OK, otherwise respond with **ERROR**. After closing the connection, the status is IP CLOSE.

## 11.4. AT+QIDEACT Deactivate GPRS/CSD PDP Context

### AT+QIDEACT Deactivate GPRS/CSD PDP Context

Test Command <b>AT+QIDEACT=?</b>	Response <b>OK</b>
Execution Command <b>AT+QIDEACT</b>	Response If close succeeds: <b>DEACT OK</b> If close fails: <b>ERROR</b>
Reference	

**NOTES**

1. Except at the status of IP INITIAL, you can deactivate GPRS/CSD PDP context by **AT+QIDEACT**. After closing the connection, the status becomes to IP INITIAL.
2. CSD context is not supported at present.

## 11.5. AT+QILPORT Set Local Port

### AT+QILPORT Set Local Port

Test Command <b>AT+QILPORT=?</b>	Response <b>+QILPORT:</b> (list of supported <b>&lt;port&gt;</b> s)  <b>OK</b>
Read Command <b>AT+QILPORT?</b>	Response <b>&lt;mode&gt;: &lt;port&gt;</b> <b>&lt;CR&gt;&lt;LF&gt;&lt;mode&gt;: &lt;port&gt;</b>  <b>OK</b>
Write Command <b>AT+QILPORT=&lt;mode&gt;,&lt;port&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

- <mode>** A string parameter which indicates the connection type  
 "TCP" TCP local port  
 "UDP" UDP local port
- <port>** 0-65535 A numeric parameter which indicates the local port

**NOTES**

This command is used to set the port for listening.

## 11.6. AT+QIREGAPP Start TCPIP Task and Set APN, User Name and Password

### AT+QIREGAPP Start TCPIP Task and Set APN, User Name and Password

Test Command <b>AT+QIREGAPP=?</b>	Response <b>+QIREGAPP: "APN","USER","PWD"</b>  <b>OK</b>
Read Command <b>AT+QIREGAPP?</b>	Response <b>+QIREGAPP: &lt;apn&gt;,&lt;user name&gt;,&lt;password&gt;</b>  <b>OK</b>
Write Command <b>AT+QIREGAPP=&lt;apn&gt;,&lt;user name&gt;,&lt; password&gt;[,&lt;rate&gt;]</b>	Response <b>OK</b> <b>ERROR</b>
Execution Command <b>AT+QIREGAPP</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

<b>&lt;apn&gt;</b>	A string parameter which indicates the GPRS access point name or the call number of CSD
<b>&lt;user name&gt;</b>	A string parameter which indicates the GPRS/CSD user name
<b>&lt;password&gt;</b>	A string parameter which indicates the GPRS/CSD password
<b>&lt;rate&gt;</b>	The speed of data transmit for CSD

### NOTES

1. The write command and execution command of this command is valid only at the status of IP INITIAL. After operating this command, the status will become to IP START.
2. The value of QICSGP (please refer to **AT+QICSGP**) defines what kind of bearer (GPRS or CSD) the parameters are used for.
3. CSD function and related configuration are not supported at present.

## 11.7. AT+QIACT Activate GPRS/CSD Context

### AT+QIACT Activate GPRS/CSD Context



Test Command <b>AT+QIACT=?</b>	Response <b>OK</b>
Execution Command <b>AT+QIACT</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

#### NOTES

1. **AT+QIACT** only activates GPRS/CSD context at the status of IP START. After operating this command, the status will become to IP CONFIG. If TA accepts the activated operation, the status will become to IP IND; after GPRS/CSD context is activated successfully, the status will become to IP GPRSACT, respond with **OK**, and otherwise respond with **ERROR**.
2. CSD context is not supported at present.

## 11.8. AT+QILOCIP Get Local IP Address

### AT+QILOCIP Get Local IP Address

Test Command <b>AT+QILOCIP=?</b>	Response <b>OK</b>
Execution Command <b>AT+QILOCIP</b>	Response If execution successful, respond <b>&lt;IP address&gt;</b> Otherwise respond <b>ERROR</b>
Reference	

#### Parameter

**<IP address>** A string parameter which indicates the IP address assigned from GPRS or CSD network

#### NOTES

1. Only at the following status: IP GPRSACT, IP STATUS, TCP/UDP CONNECTING, CONNECT OK, IP CLOSE can get local IP address by **AT+QILOCIP**, otherwise respond ERROR. And if the status before executing the command is IP GPRSACT, the status will become to IP STATUS after the command.
2. CSD function is not supported at present.

## 11.9. AT+QISTAT Query Current Connection Status

### AT+QISTAT Query Current Connection Status

Test Command <b>AT+QISTAT=?</b>	Response <b>OK</b>
Execution Command <b>AT+QISTAT</b>	Response When <b>AT+QIMUX=0</b> , respond <b>OK</b>  <b>STATE: &lt;state&gt;</b> When <b>AT+QIMUX=1</b> , respond <b>List of</b> <b>(+QISTAT: &lt;index&gt;,&lt;mode&gt;,&lt;addr&gt;,&lt;port&gt;&lt;CR&gt;&lt;LF&gt;)</b>  <b>OK</b>
Reference	

### Parameter

<b>&lt;state&gt;</b>	A string parameter to indicate the status of the connection
"IP INITIAL"	The TCPIP stack is in idle state
"IP START"	The TCPIP stack has been registered
"IP CONFIG"	It has been start-up to activate GPRS/CSD context
"IP IND"	It is activating GPRS/CSD context
"IP GPRSACT"	GPRS/CSD context has been activated successfully
"IP STATUS"	The local IP address has been gotten by the command <b>AT+QILOCIP</b>
"TCP CONNECTING"	It is trying to establish a TCP connection
"UDP CONNECTING"	It is trying to establish a UDP connection
"IP CLOSE"	The TCP/UDP connection has been closed
"CONNECT OK"	The TCP/UDP connection has been established successfully
"PDP DEACT"	GPRS/CSD context was deactivated because of unknown reason

If **ATV** was set to 0 by the command **ATV0**, the TCPIP stack gives the following numeric to indicate the former status

0	"IP INITIAL"
1	"IP START"
2	"IP CONFIG"
3	"IP IND"
4	"IP GPRSACT"
5	"IP STATUS"

6	"TCP CONNECTING" or "UDP CONNECTING"
7	"IP CLOSE"
8	"CONNECT OK"
9	"PDP DEACT"

<b>&lt;index&gt;</b>	The index of the connection, the range is (0-5)
<b>&lt;mode&gt;</b>	The type of the connection
	"TCP"          TCP connection
	"UDP"          UDP connection
<b>&lt;addr&gt;</b>	The IP address of the remote
<b>&lt;port&gt;</b>	The port of the remote

### NOTES

1. Display former style of response when **QIMUX=0** and the later style of response when **QIMUX=1**.
2. CSD context is not supported at present.

## 11.10. AT+QISTATE Query Connection Status of the Current Access

### AT+QISTATE Query Connection Status of the Current Access

Test Command <b>AT+QISTATE=?</b>	Response <b>OK</b>
Execution Command <b>AT+QISTATE</b>	Response When <b>AT+QIMUX=0</b> , respond <b>OK</b>  <b>STATE: &lt;state&gt;</b> When <b>AT+QIMUX=1</b> , respond <b>OK</b>  <b>STATE: &lt;state&gt;</b>  <b>+QISTAT: &lt;index&gt;,&lt;mode&gt;,&lt;addr&gt;,&lt;port&gt;,&lt;socketstate&gt;</b>  <b>OK</b> Otherwise respond <b>ERROR</b>
Reference	

## Parameter

---

<b>&lt;state&gt;</b>	A string parameter to indicate the status of the connection
	When <b>AT+QIMUX=0</b> :
"IP INITIAL"	The TCPIP stack is in idle state
"IP START"	The TCPIP stack has been registered
"IP CONFIG"	It has been start-up to activate GPRS/CSD context
"IP IND"	It is activating GPRS/CSD context
"IP GPRSACT"	GPRS/CSD context has been activated successfully
"IP STATUS"	The local IP address has been gotten by the command <b>AT+QILOCIP</b>
"TCP CONNECTING"	It is trying to establish a TCP connection
"UDP CONNECTING"	It is trying to establish a UDP connection
"IP CLOSE"	The TCP/UDP connection has been closed
"CONNECT OK"	The TCP/UDP connection has been established successfully
"PDP DEACT"	GPRS/CSD context was deactivated because of unknown reason
	When <b>AT+QIMUX=1</b> :
"IP INITIAL"	The TCPIP stack is in idle state
"IP START"	The TCPIP stack has been registered
"IP CONFIG"	It has been start-up to activate GPRS/CSD context
"IP IND"	It is activating GPRS/CSD context
"IP GPRSACT"	GPRS/CSD context has been activated successfully
"IP STATUS"	The local IP address has been gotten by the command <b>AT+QILOCIP</b>
"IP PROCESSING"	Data phase. Processing the existing connection now
"PDP DEACT"	GPRS/CSD context was deactivated because of unknown reason
<b>&lt;index&gt;</b>	The index of the connection, the range is (0-5)
<b>&lt;mode&gt;</b>	The type of the connection
	"TCP" TCP connection
	"UDP" UDP connection
<b>&lt;addr&gt;</b>	The IP address of the remote
<b>&lt;port&gt;</b>	The port of the remote
<b>&lt;socketstate&gt;</b>	A string parameter to indicate the status of the access connection, including INITIAL,CONNECTED

---

## 11.11. AT+QISSTAT Query the Current Server Status

### AT+QISSTAT Query the Current Server Status

Test Command <b>AT+QISSTAT=?</b>	Response <b>OK</b>
Execution Command <b>AT+QISSTAT</b>	Response When <b>AT+QIMUX=0</b> , respond <b>OK</b>  <b>S: &lt;ServerState&gt;</b> When <b>AT+QIMUX=1</b> , respond <b>OK</b> <b>S: &lt;ServerState&gt;</b> <b>C : &lt;index&gt;,&lt;mode&gt;,&lt;addr&gt;,&lt;port&gt;</b> Otherwise respond <b>ERROR</b>
Reference	

### Parameter

<b>&lt;ServerState&gt;</b>	A string parameter to indicate the status of the connection "INITIAL"      The TCPIP stack is in idle state "OPENNING"    The TCPIP stack has been registered "LISTENING"    Listening to server port "CLOSING"      Closing connection now
<b>&lt;index&gt;</b>	The index of the connection, the range is (0-4)
<b>&lt;mode&gt;</b>	The type of the connection "TCP"    TCP connection "UDP"    UDP connection
<b>&lt;addr&gt;</b>	The IP address of the remote
<b>&lt;port&gt;</b>	The port of the remote

## 11.12. AT+QIDNSCFG Configure Domain Name Server

### AT+QIDNSCFG Configure Domain Name Server

Test Command <b>AT+QIDNSCFG=?</b>	Response <b>OK</b>
Read Command <b>AT+QIDNSCFG?</b>	Response <b>PrimaryDns: &lt;pri_dns&gt;</b>

	SecondaryDns: <sec_dns>
	OK
Write Command AT+QIDNSCFG=<pri_dns>[,<sec_dns>]	Response OK ERROR
Reference	

### Parameter

- <pri\_dns> A string parameter which indicates the IP address of the primary domain name server  
 <sec\_dns> A string parameter which indicates the IP address of the secondary domain name server

### NOTES

1. Because TA will negotiate to get the DNS server from GPRS/CSD network automatically when activating GPRS/CSD context, it is STRONGLY recommended to configure the DNS server at the status of IP GPRSACT, IP STATUS, CONNECT OK and IP CLOSE if it is necessary.
2. CSD function and configuration are not supported currently.

## 11.13. AT+QIDNSGIP Query the IP Address of Given Domain Name

AT+QIDNSGIP Query the IP Address of Given Domain Name	
Test Command AT+QIDNSGIP=?	Response OK
Write Command AT+QIDNSGIP=<domain name>	Response OK ERROR If succeeds, return: <IP address> If fails, return: ERROR: <err> STATE: <state>
Reference	

### Parameter

- <domain name> A string parameter which indicates the domain name  
 <IP address> A string parameter which indicates the IP address corresponding to the domain name

<b>&lt;err&gt;</b>	A numeric parameter which indicates the error code
1	DNS not Authorization
2	Invalid parameter
3	Network error
4	No server
5	Time out
6	No configuration
7	No memory
8	Unknown error
<b>&lt;state&gt;</b>	Refer to <b>AT+QISTAT</b>

## 11.14. AT+QIDNSIP Connect with IP Address or Domain Name Server

### AT+QIDNSIP Connect with IP Address or Domain Name Server

Test Command <b>AT+QIDNSIP=?</b>	Response <b>+QIDNSIP:</b> (list of supported <b>&lt;mode&gt;</b> s)  <b>OK</b>
Read Command <b>AT+QIDNSIP?</b>	Response <b>+QIDNSIP:</b> <b>&lt;mode&gt;</b>  <b>OK</b>
Write Command <b>AT+QIDNSIP=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

<b>&lt;mode&gt;</b>	A numeric parameter indicates which kind of server format is used when establishing the connection: IP address server or domain name server
0	The address of the remote server is a dotted decimal IP address
1	The address of the remote server is a domain name

## 11.15. AT+QIHEAD Add an IP Header when Receiving Data

### AT+QIHEAD Add an IP Header when Receiving Data

Test Command	Response
--------------	----------

AT+QIHEAD=?	+QIHEAD: (list of supported <mode>s)  OK
Read Command AT+QIHEAD?	Response +QIHEAD: <mode>  OK
Write Command AT+QIHEAD=<mode>	Response OK ERROR
Reference	

### Parameter

<mode>	A numeric parameter which indicates whether or not to add an IP header before the received data
0	DO Not add IP header
1	Add a header before the received data, and the format is "IPD(data length):"

## 11.16. AT+QIAUTOS Set Auto Sending Timer

### AT+QIAUTOS Set Auto Sending Timer

Test Command AT+QIAUTOS=?	Response +QIAUTOS: (list of supported <mode>s), (list of supported <time>s)  OK
Read Command AT+QIAUTOS?	Response +QIAUTOS: <mode>,<time>  OK
Write Command AT+QIAUTOS=<mode>[,<time>]	Response OK ERROR
Reference	

### Parameter

<mode>	A numeric parameter which indicates whether or not to set timer when sending data
--------	-----------------------------------------------------------------------------------



<u>0</u>	DO Not set timer for data sending
<u>1</u>	Set timer for data sending
<b>&lt;time&gt;</b>	A numeric parameter which indicates a time in seconds After the time expires since <b>AT+QISEND</b> , the input data will be sent automatically

## 11.17. AT+QIPROMPT Set Prompt of '>' when Sending Data

### AT+QIPROMPT Set Prompt of '>' when Sending Data

Test Command <b>AT+QIPROMPT=?</b>	Response <b>+QIPROMPT:</b> (list of supported <b>&lt;send prompt&gt;</b> s)  <b>OK</b>
Read Command <b>AT+QIPROMPT?</b>	Response <b>+QIPROMPT:</b> <b>&lt;send prompt&gt;</b>  <b>OK</b>
Write Command <b>AT+QIPROMPT=&lt;send prompt&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

<b>&lt;send prompt&gt;</b>	A numeric parameter which indicates whether or not to echo prompt ">" after issuing <b>AT+QISEND</b> Command
<u>0</u>	No prompt ">" and show "SEND OK" when sending successes
<u>1</u>	Echo prompt ">" and show "SEND OK" when sending successes
<u>2</u>	No prompt and not show "SEND OK" when sending successes
<u>3</u>	Echo prompt ">" and show "socket ID" "SEND OK" when sending successes

## 11.18. AT+QISERVER Configure as Server

### AT+QISERVER Configure as Server

Test Command <b>AT+QISERVER=?</b>	Response <b>OK</b>
Read Command <b>AT+QISERVER?</b>	Response <b>+QISERVER:</b> <b>&lt;mode&gt;</b> , <b>&lt;num&gt;</b>

	<b>OK</b>
Execution Command <b>AT+QISERVER</b>	Response <b>OK</b> <b>ERROR</b> If configured as server successfully, return: <b>SERVER OK</b> If configured as server unsuccessfully, return: <b>CONNECT FAIL</b>
Write Command <b>AT+QISERVER=&lt;type&gt;[,&lt;max&gt;]</b>	Response <b>OK</b> <b>ERROR</b> If configured as server successfully, return: <b>SERVER OK</b> If configured as server unsuccessfully, return: <b>CONNECT FAIL</b>
Reference	

## Parameter

<b>&lt;mode&gt;</b>	0	NOT configured as server
	1	Configured as server
<b>&lt;num&gt;</b>	The number of clients that have been connected in. The range is 1~5	
<b>&lt;type&gt;</b>	A numeric indicates the type of the server	
	0	TCP server
	1	UDP server
<b>&lt;max&gt;</b>	The maximum number of clients allowed to connect in. The default value is 1. The range is 1-5	

## NOTES

1. This command configures the module as a TCP server and the maximum allowed client is 1.
2. The parameter **<max>** is excluded when QIMUX is 0.

## 11.19. AT+QICSGP Select CSD or GPRS as the Bearer

AT+QICSGP Select CSD or GPRS as the Bearer	
Test Command <b>AT+QICSGP=?</b>	Response <b>+QICSGP: 0-CSD,DIAL NUMBER,USER NAME,PASSWORD,RATE(0-3) +QICSGP: 1-GPRS,APN,USER NAME,PASSWORD  OK</b>
Read Command <b>AT+QICSGP?</b>	Response <b>+QICSGP: &lt;mode&gt;  OK</b>
Write Command <b>AT+QICSGP=&lt;mode&gt;[(&lt;apn&gt;,&lt;user name&gt;,&lt;password&gt;)](&lt;dial number&gt;,&lt;user name&gt;,&lt;password&gt;,&lt;rate&gt;)]</b>	Response <b>OK ERROR</b>
Reference	

### Parameter

<b>&lt;mode&gt;</b>	A numeric parameter which indicates the bearer type
0	Set CSD as the bearer for TCPIP connection
<u>1</u>	Set GPRS as the bearer for TCPIP connection

GPRS parameters:

<b>&lt;apn&gt;</b>	A string parameter which indicates the access point name
<b>&lt;user name&gt;</b>	A string parameter which indicates the user name
<b>&lt;password&gt;</b>	A string parameter which indicates the password

CSD parameters:

<b>&lt;dial number&gt;</b>	A string parameter which indicates the CSD dial numbers
<b>&lt;user name&gt;</b>	A string parameter which indicates the CSD user name
<b>&lt;password&gt;</b>	A string parameter which indicates the CSD password
<b>&lt;rate&gt;</b>	A numeric parameter which indicates the CSD connection rate
0	2400
1	4800
<u>2</u>	9600
3	14400

**NOTE**

CSD configuration is not supported at present.

## 11.20. AT+QISRVC Choose Connection

### AT+QISRVC Choose Connection

Test Command <b>AT+QISRVC=?</b>	Response <b>+QISRVC:</b> (list of supported <connection>s)  <b>OK</b>
Read Command <b>AT+QISRVC?</b>	Response <b>+QISRVC:</b> <connection>  <b>OK</b>
Write Command <b>AT+QISRVC=&lt;connection&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

<b>&lt;connection&gt;</b>	A numeric parameter which indicates the chosen connection
1	Choose the connection in which MS used as a client
2	Choose the connection in which MS used as a server

**NOTE**

There could be two connections at one time: one connection is that MS connects with a remote server as a client; the other connection is that MS accepts a remote client as a server. Using this Command to specify which connection data will be sent through.

## 11.21. AT+QISHOWRA Set Whether or not to Display the Address of Sender

### AT+QISHOWRA Set Whether or not to Display the Address of Sender

Test Command <b>AT+QISHOWRA=?</b>	Response <b>+QISHOWRA:</b> (list of supported <mode>s)  <b>OK</b>
Read Command <b>AT+QISHOWRA?</b>	Response <b>+QISHOWRA:</b> <mode>  <b>OK</b>
Write Command <b>AT+QISHOWRA=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

<b>&lt;mode&gt;</b>	A numeric parameter which indicates whether to show the address (including IP address in dotted decimal style and port of the remote end) before the received data or not
<u>0</u>	DO NOT show the address. Default
1	Show the address; the format to show the address is like: <b>RCV FROM:</b> <b>&lt;IP ADDRESS&gt;:&lt;PORT&gt;</b>

## 11.22. AT+QISCON Save TCPIP Application Context

### AT+QISCON Save TCPIP Application Context

Test Command <b>AT+QISCON=?</b>	Response <b>OK</b>
Read Command <b>AT+QISCON?</b>	Response TA returns TCPIP application context, which consists of the following AT command parameters. <b>SHOW APPTCPIP CONTEXT</b> <b>+QIDNSIP:</b> <mode> <b>+QIPROMPT:</b> <sendprompt> <b>+QIHEAD:</b> <iphead> <b>+QISHOWRA:</b> <srip> <b>+QICSGP:</b> <csgp> <b>Gprs Config APN:</b> <apn> <b>Gprs Config UserId:</b> <gusr> <b>Gprs Config Password:</b> <gpwd> <b>Gprs Config inactivityTimeout:</b> <timeout> <b>CSD Dial Number:</b> <cnum>

	<b>CSD Config UserId:&lt;usr&gt;</b> <b>CSD Config Password:&lt;cpwd&gt;</b> <b>CSD Config rate:&lt;crate&gt;</b> <b>App Tcpi Mode:&lt;mode&gt;</b> <b>In Transparent Transfer Mode</b> <b>Number of Retry:&lt;nmRetry&gt;</b> <b>Wait Time:&lt;waitTm&gt;</b> <b>Send Size:&lt;sendSz&gt;</b> <b>esc:&lt;esc&gt;</b>
	<b>OK</b>
Execution Command	Response
<b>AT+QISCON</b>	<b>OK</b>
Reference	

### Parameter

<mode>	See <b>AT+QIDNSIP</b>
<sendprompt>	See <b>AT+QIPROMPT</b>
<iphead>	See <b>AT+QIHEAD</b>
<srip>	See <b>AT+QISHOWRA</b>
<csgp>	See <b>AT+QICSGP</b>
<apn>	See <b>AT+QICSGP</b>
<gusr>	See <b>AT+QICSGP</b>
<gpwd>	See <b>AT+QICSGP</b>
<timeout>	See <b>AT+QICSGP</b>
<cnum>	See <b>AT+QICSGP</b>
<usr>	See <b>AT+QICSGP</b>
<cpwd>	See <b>AT+QICSGP</b>
<crate>	See <b>AT+QICSGP</b>

The following four parameters are only for transparent transfer mode.

<nmRetry>	See <b>AT+QITCFG</b>
<waitTm>	See <b>AT+QITCFG</b>
<sendSz>	See <b>AT+QITCFG</b>
<esc>	See <b>AT+QITCFG</b>

### NOTES

1. The execution command TA saves TCPIP Application Context which consists of the following AT Command parameters, and when system is rebooted, the parameters will be loaded automatically:  
**AT+QIDNSIP,AT+QIPROMPT,AT+QIHEAD,AT+QISHOWRA, AT+QICSGP, AT+QITCFG.**
2. The execution command only save the corresponding parameters of the foreground context (refer to

AT+QIFGCNT).

- CSD configuration is not supported at present.

## 11.23. AT+QIMODE Select TCPIP Transfer Mode

### AT+QIMODE Select TCPIP Transfer Mode

Test Command <b>AT+QIMODE=?</b>	Response <b>+QIMODE:(0-NORMAL MODE,1-TRANSPARENT MODE)</b>  <b>OK</b>
Read Command <b>AT+QIMODE?</b>	Response <b>+QIMODE: &lt;mode&gt;</b>  <b>OK</b>
Write Command <b>AT+QIMODE=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

#### Parameter

<b>&lt;mode&gt;</b>	<u>0</u>	Normal mode. In this mode, the data should be sent by the command <b>AT+QISEND</b>
	1	Transparent mode. In this mode, UART will enter data mode after TCP/UDP connection has been established. In data mode, all input data from UART will be sent to the remote end. <b>+++</b> can help to switch data mode to command mode. And then <b>ATO</b> can help to switch command mode to data mode

## 11.24. AT+QITCFG Configure Transparent Transfer Mode

### AT+QITCFG Configure Transparent Transfer Mode

Test Command <b>AT+QITCFG=?</b>	Response <b>+QITCFG: (list of supported &lt;NmRetry&gt;s),(list of supported &lt;WaitTm&gt;s),(list of supported &lt;SendSz&gt;s),(list of supported &lt;esc&gt;s)</b>  <b>OK</b>
Read Command	Response

AT+QITCFG?	+QITCFG: <NmRetry>,<WaitTm>,<SendSz>,<esc>
	OK
Write Command AT+QITCFG=<NmRetry>,<WaitTm>,<SendSz>,<esc>	Response OK ERROR
Reference	

## Parameter

<NmRetry>	Number of times to retry to send an IP packet
<WaitTm>	Number of 100ms intervals to wait for serial input before sending the packet
<SendSz>	Size in bytes of data block to be received from serial port before sending
<esc>	Whether to turn on the escape sequence or not, default is TRUE

## NOTES

1. <WaitTm> and <SendSz> are two conditions to send data packet.
2. Firstly, if the length of the input data from UART is greater than or equal to <SendSz>, the TCPIP stack will send the data by length <SendSz> to the remote.
3. Secondly, if the length of the input data from UART is less than <SendSz>, and the idle time keeps beyond the time defined by <WaitTm>, the TCPIP stack will send all the data in the buffer to the remote.
4. This command is invalid when QIMUX is 1.

## 11.25. AT+QISHOWPT Control Whether or not to Show the Protocol

### Type

AT+QISHOWPT Control Whether or not to Show the Protocol Type	
Test Command AT+QISHOWPT=?	Response +QISHOWPT: (list of supported <mode>s)  OK
Read Command AT+QISHOWPT?	Response +QISHOWPT: <mode>  OK
Write Command AT+QISHOWPT=<mode>	Response OK



Reference	ERROR
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**Parameter**

<b>&lt;mode&gt;</b>	<u>0</u>	DO NOT show the transport protocol type at the end of header of the received TCP/UDP data
	1	Show the transport protocol type at the end of header of the received TCP/UDP data as the following format. <b>IPD(data length)(TCP/UDP):</b>

**NOTE**

This command is invalid if QIHEAD was set as 0 by the command **AT+QIHEAD=0**.

## 11.26. AT+QIMUX Control Whether or not to Enable Multiple TCPIP

### Session

<b>AT+QIMUX Control Whether or not to Enable Multiple TCPIP Session</b>	
Test Command <b>AT+QIMUX=?</b>	Response <b>+QIMUX:</b> (list of supported <b>&lt;mode&gt;</b> s)  <b>OK</b>
Read Command <b>AT+QIMUX?</b>	Response <b>+QIMUX:</b> <b>&lt;mode&gt;</b>  <b>OK</b>
Write Command <b>AT+QIMUX=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

**Parameter**

<b>&lt;mode&gt;</b>	<u>0</u>	DO NOT enable multiple TCPIP session at the same time
	1	Enable multiple TCPIP session at the same time

## 11.27. AT+QISHOWLA Control Whether or not to Display Local IP

### Address

#### AT+QISHOWLA Control Whether or not to Display Local IP Address

Test Command <b>AT+QISHOWLA=?</b>	Response <b>+QISHOWLA:</b> (list of supported <b>&lt;mode&gt;</b> s)  <b>OK</b>
Read Command <b>AT+QISHOWLA?</b>	Response <b>+QISHOWLA:</b> <b>&lt;mode&gt;</b>  <b>OK</b>
Write Command <b>AT+QISHOWLA=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

### Parameter

<b>&lt;mode&gt;</b>	A numeric parameter indicates whether to show the destination address before the received data or not
<u>0</u>	DO NOT show the destination address
1	Show the destination address: <b>TO:&lt;IP ADDRESS&gt;</b>

#### NOTE

Because M35 can activate two GPRS contexts at the same time. i.e. M35 can get two local IP addresses. It is necessary to point out the destination of the received data when two GPRS contexts have been activated at the same time.

## 11.28. AT+QIFGCNT Select a Context as Foreground Context

#### AT+QIFGCNT Select a Context as Foreground Context

Test Command <b>AT+QIFGCNT=?</b>	Response <b>+QIFGCNT:</b> (list of supported <b>&lt;id&gt;</b> s)  <b>OK</b>
Read Command	Response

AT+QIFGCNT?	+QIFGCNT: <id>,<channel>  OK
Write Command AT+QIFGCNT=<id>	Response OK ERROR
Reference	

### Parameter

<id>	A numeric indicates which context will be set as foreground context. The range is 0-1
<channel>	A numeric indicates which channel is controlling the context <id>
0	VIRTUAL_UART_1
1	VIRTUAL_UART_2
2	VIRTUAL_UART_3
3	VIRTUAL_UART_4
255	The context is not controlled by any channel

#### NOTE

When CMUX is opened, if the status of the context defined by <id> is not IP\_INITIAL and the context is controlled by the other channel, it will return ERROR.

## 11.29. AT+QISACK Query the Data Information for Sending

### AT+QISACK Query the Data Information for Sending

Test Command AT+QISACK=?	Response OK
Execution Command AT+QISACK	Response +QISACK: <sent>, <acked>, <nAcked>  OK
Write Command AT+QISACK=<n>	Response +QISACK: <sent>, <acked>, <nAcked>  OK
Reference	

## Parameter

<n>	The index for querying the connection
<sent>	A numeric indicates the total length of the data that has been sent through the session
<acked>	A numeric indicates the total length of the data that has been acknowledged by the remote
<nAcked>	A numeric indicates the total length of the data that has been sent but not acknowledged by the remote

### NOTES

1. This command is invalid when QIMUX was set as 0 by the command **AT+QIMUX=0**.
2. This command could be affected by the command **AT+QISRVC**. If the QISRVC was set as 1, this command is used to query the information of sending data during the session in which M35 serves as a client. If the QISRVC was set as 2, this command is used to query the data information for sending during the session in which M35 serves as a server.

## 11.30. AT+QINDI Set the Method to Handle Received TCP/IP Data

### AT+QINDI Set the Method to Handle Received TCP/IP Data

Test Command <b>AT+QINDI=?</b>	Response <b>+QINDI:</b> (list of supported <m>s)  <b>OK</b>
Read Command <b>AT+QINDI?</b>	Response <b>+QINDI:</b> <m>  <b>OK</b>
Write Command <b>AT+QINDI=&lt;m&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

## Parameter

<m>	A numeric indicates how the mode handles the received data
0	Output the received data through UART directly. In the case, it probably includes header at the beginning of a received data packet. Please refer to the commands. <b>AT+QIHEAD,AT+QISHOWRA, AT+QISHOWPT,AT+QISHOWLA</b>
1	Output a notification statement “ <b>+QIRDI: &lt;id&gt;,&lt;sc&gt;,&lt;sid&gt;</b> ” through UART. This statement will be displayed only one time until all the received data from the connection (defined by <id>,<sc>,<sid>) has been retrieved by the command

	<b>AT+QIRD&lt;id&gt;</b> A numeric points out which context the connection for the received data is based on. Please refer to the parameter <b>&lt;id&gt;</b> in the command <b>AT+QIFGCNT</b> . The range is 0-1
<b>&lt;sc&gt;</b>	A numeric points out the role of M35 in the connection for the received data. 1 The module serves as the client of the connection 2 The module serves as the server of the connection
<b>&lt;sid&gt;</b>	A numeric indicates the index of the connection for the received data. The range is 0-5 When QIMUX was set as 0 by the command <b>AT+QIMUX=0</b> , this parameter will be always 0.

### 11.31. AT+QIRD Retrieve the Received TCP/IP Data

AT+QIRD Retrieve the Received TCP/IP Data	
Test Command <b>AT+QIRD=?</b>	Response <b>+QIRD:</b> (list of supported <b>&lt;id&gt;</b> s),(list of supported <b>&lt;sc&gt;</b> s),(list of supported <b>&lt;sid&gt;</b> s),(list of supported <b>&lt;len&gt;</b> s)  <b>OK</b>
Write Command <b>AT+QIRD=&lt;id&gt;,&lt;sc&gt;,&lt;sid&gt;,&lt;len&gt;</b>	Response <b>[+QIRD:</b> <b>&lt;ipAddr&gt;:&lt;port&gt;,&lt;type&gt;,&lt;length&gt;&lt;CR&gt;&lt;LF&gt;&lt;data&gt;</b> <b>OK</b>  <b>ERROR</b>
Reference	

#### Parameter

<b>&lt;id&gt;</b>	A numeric points out which context the connection for the received data is based on. Please refer to the parameter <b>&lt;id&gt;</b> in the command <b>AT+QIFGCNT</b> . The range is 0-1
<b>&lt;sc&gt;</b>	A numeric points out the role of M35 in the connection for the received data 1 The module serves as the client of the connection 2 The module serves as the server of the connection
<b>&lt;sid&gt;</b>	A numeric indicates the index of the connection for the received data. The range is 0-5. When QIMUX was set as 0 by the command <b>AT+QIMUX=0</b> , this parameter will be always 0
<b>&lt;len&gt;</b>	The maximum length of data to be retrieved. The range is 1-1500
<b>&lt;ipAddr&gt;</b>	The address of the remote end. It is a dotted-decimal IP
<b>&lt;port&gt;</b>	The port of the remote end
<b>&lt;type&gt;</b>	An alpha string without quotation marks indicates the transport protocol type TCP the transport protocol is TCP

	UDP	the transport protocol is UDP
<length>		The real length of the retrieved data
<data>		The retrieved data

#### NOTES

1. <id>, <sc> and <sid> are the same as the parameters in the statement "+QIRDI: <id>,<sc>,<sid>".
2. If it replies only OK for the write command, it means there is no received data in the buffer of the connection.

## 11.32. AT+QISDE Control Whether or Not to Echo the Data for QISEND

### AT+QISDE Control Whether or Not to Echo the Data for QISEND

Test Command <b>AT+QISDE=?</b>	Response <b>+QISDE:</b> (list of supported <m>s)  <b>OK</b>
Read Command <b>AT+QISDE?</b>	Response <b>+QISDE:</b> <m>  <b>OK</b>
Write Command <b>AT+QISDE=&lt;m&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

#### Parameter

<m>	A numeric indicates whether or not to echo the data for <b>AT+QISEND</b>
0	Do not echo the data
1	Echo the data

## 11.33. AT+QPING Ping a Remote Server

### AT+QPING Ping a Remote Server

Test Command <b>AT+QPING=?</b>	Response <b>+QPING:</b> "HOST",(list of supported <timeout>s),(list of supported <pingnum>s)
-----------------------------------	-------------------------------------------------------------------------------------------------

	<b>OK</b>
Write Command <b>AT+QPING="&lt;host&gt;"[,&lt;timeout&gt;][,&lt;pingnum&gt;]</b>	Response <b>OK</b>  <b>[+QPING:</b> <b>&lt;result&gt;[,&lt;ipAddr&gt;,&lt;bytes&gt;,&lt;time&gt;,&lt;tll&gt;]&lt;CR&gt;&lt;LF&gt;</b> <b>...]&lt;CR&gt;&lt;LF&gt;</b> <b>+QPING:&lt;finresult&gt;[,&lt;sent&gt;,&lt;rcvd&gt;,&lt;lost&gt;,&lt;min&gt;,&lt;max&gt;,&lt;avg&gt;]</b>
Reference	<b>ERROR</b>

## Parameter

<b>&lt;host&gt;</b>	The host address in string style. It could be a domain name or a dotted decimal IP address
<b>&lt;timeout&gt;</b>	A numeric gives the maximum time to wait for the response of each ping request. Unit: second. Range: 1-255. Default: 1
<b>&lt;pingnum&gt;</b>	A numeric indicates the maximum time of ping request. Range: 1-10. Default: 4
<b>&lt;result&gt;</b>	The result of each ping request
	0 Received the ping response from the server. In the case, it is followed by " <b>&lt;ipAddr&gt;,&lt;bytes&gt;,&lt;time&gt;,&lt;tll&gt;</b> "
	1 Timeout for the ping request. In the case, no other information follows it
<b>&lt;ipAddr&gt;</b>	The IP address of the remote server. It is a dotted decimal IP
<b>&lt;bytes&gt;</b>	The length of sending each ping request
<b>&lt;time&gt;</b>	The time expended to wait for the response for the ping request. Unit: ms
<b>&lt;tll&gt;</b>	The value of time to live of the response packet for the ping request
<b>&lt;finresult&gt;</b>	The final result of the command
	2 It is finished normally. It is successful to activate GPRS and find the host. In the case, it is followed by " <b>&lt;sent&gt;,&lt;rcvd&gt;,&lt;lost&gt;,&lt;min&gt;,&lt;max&gt;,&lt;avg&gt;</b> "
	3 The TCP/IP stack is busy now. In the case, no other information follows it
	4 Do NOT find the host. In the case, no other information follows it
	5 Failed to activate PDP context. In the case, no other information follows it
<b>&lt;sent&gt;</b>	Total number of sending the ping requests
<b>&lt;rcvd&gt;</b>	Total number of the ping requests that received the response
<b>&lt;lost&gt;</b>	Total number of the ping requests that were timeout
<b>&lt;min&gt;</b>	The minimum response time. Unit: ms
<b>&lt;max&gt;</b>	The maximum response time. Unit: ms
<b>&lt;avg&gt;</b>	The average response time. Unit: ms

## 11.34. AT+QNTTP Synchronize the Local Time Via NTP

### AT+QNTTP Synchronize the Local Time Via NTP

Test Command <b>AT+QNTTP=?</b>	Response <b>+QNTTP: "SERVER",(list of supported &lt;port&gt;s)</b>  <b>OK</b>
Read Command <b>AT+QNTTP?</b>	Response <b>+QNTTP: "&lt;server&gt;",&lt;port&gt;</b>  <b>OK</b>
Execution Command <b>AT+QNTTP</b>	Response <b>OK</b>  <b>+QNTTP: &lt;result&gt;</b>
Write Command <b>AT+QNTTP="&lt;server&gt;"[,&lt;port&gt;]</b>	Response <b>OK</b>  <b>+QNTTP: &lt;result&gt;</b>  <b>ERROR</b>
Reference	

### Parameter

<b>&lt;server&gt;</b>	The address of the Time Server in string style. It could be a domain name or a dotted decimal IP address
<b>&lt;port&gt;</b>	The port of the Time Server
<b>&lt;result&gt;</b>	The result of time synchronization
0	Successfully synchronize the local time
1	Failed to synchronize the local time because of unknown reason
2	Failed to receive the response from the Time Server
3	The TCP/IP stack is busy now
4	Do Not find the Time Server
5	Failed to activate PDP context

#### NOTE

The factory Time Server is the National Time Service Centre of China whose address is "210.72.145.44" and port is 123.



# 12 Supplementary Service Commands

## 12.1. AT+CACM Accumulated Call Meter (ACM) Reset or Query

<b>AT+CACM Accumulated Call Meter (ACM) Reset or Query</b>	
Test Command <b>AT+CACM=?</b>	Response <b>OK</b>
Read Command <b>AT+CACM?</b>	Response TA returns the current value of ACM. <b>+CACM: &lt;acm&gt;</b>  <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Write Command <b>AT+CACM=[&lt;passwd&gt;]</b>	Response TA resets the advice of charge related Accumulated Call Meter (ACM) value in SIM file EF (ACM). ACM contains the total number of home units for both the current and preceding calls. <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;acm&gt;</b>	String type; three bytes of the current ACM value in hexa-decimal format (e.g. "00001E" indicates decimal value 30) 000000 – FFFFFFF
<b>&lt;passwd&gt;</b>	String type: SIM PIN2

## 12.2. AT+CAMM Accumulated Call Meter Maximum (ACM Max) Set or Query

### AT+CAMM Accumulated Call Meter Maximum (ACM Max) Set or Query

Test Command <b>AT+CAMM=?</b>	Response <b>OK</b>
Read Command <b>AT+CAMM?</b>	Response TA returns the current value of ACM max. <b>+CAMM: &lt;acmmax&gt;</b>  <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Write Command <b>AT+CAMM=[&lt;acmmax&gt;[,&lt;passwd&gt;]]</b>	Response TA sets the advice of charge related Accumulated Call Meter maximum value in SIM file EF (ACM max). ACM max contains the maximum number of home units allowed to be consumed by the subscriber. <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

#### Parameter

<b>&lt;acmmax&gt;</b>	String type; three bytes of the max. ACM value in hex-decimal format (e.g. "00001E" indicates decimal value 30) 000000 Disable ACM max feature 000001-FFFFFF
<b>&lt;passwd&gt;</b>	String type: SIM PIN2

## 12.3. AT+CAOC Advice of Charge

### AT+CAOC Advice of Charge

Test Command <b>AT+CAOC=?</b>	Response <b>+CAOC:</b> (list of supported <b>&lt;mode&gt;</b> s)
----------------------------------	---------------------------------------------------------------------

	<b>OK</b>
Read Command <b>AT+CAOC?</b>	Response <b>+CAOC: &lt;mode&gt;</b>
	<b>OK</b>
Write Command <b>AT+CAOC=&lt;mode&gt;</b>	Response TA sets the advice of charge supplementary service function mode. If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b> If <mode>=0, TA returns the current call meter value <b>+CAOC: &lt;ccm&gt;</b>
	<b>OK</b> If <mode>=1, TA deactivates the unsolicited reporting of CCM value
	<b>OK</b> If <mode>=2, TA activates the unsolicited reporting of CCM value
	<b>OK</b>
Reference GSM 07.07	

### Parameter

<b>&lt;mode&gt;</b>	0	Query CCM value
	1	Deactivate the unsolicited reporting of CCM value
	2	Activate the unsolicited reporting of CCM value
<b>&lt;ccm&gt;</b>	String type; three bytes of the current CCM value in hex-decimal format (e.g. "00001E" indicates decimal value 30); bytes are similarly coded as ACM max value in the SIM 000000-FFFFFF	

## 12.4. AT+CCFC Call Forwarding Number and Conditions Control

### AT+CCFC Call Forwarding Number and Conditions Control

Test Command <b>AT+CCFC=?</b>	Response <b>+CCFC: (list of supported &lt;reads&gt;s)</b>
	<b>OK</b>
Write Command <b>AT+CCFC=&lt;reads&gt;,&lt;mode&gt;[,&lt;numbe</b>	Response TA controls the call forwarding supplementary service.

**r>[,<type>[,<class>[,<subaddr>[,<sat type>[,<time>]]]]]**

Registration, erasure, activation, deactivation, and status query are supported.

Only ,<reads> and <mode> should be entered with mode (0-2,4)

If <mode><>2 and command successful

**OK**

If <mode>=2 and command successful (only in connection with <reads> 0 –3)

For registered call forwarding numbers:

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

**OK**

If no call forwarding numbers are registered (and therefore all classes are inactive):

**+CCFC: <status>, <class>**

**OK**

where <status>=0 and <class>=15

If error is related to ME functionality:

**+CME ERROR: <err>**

Reference  
GSM 07.07

### Parameter

<b>&lt;reads&gt;</b>	0	Unconditional
	1	Mobile busy
	2	No reply
	3	Not reachable
	4	All call forwarding (0-3)
<b>&lt;mode&gt;</b>	5	All conditional call forwarding (1-3)
	0	Disable
<b>&lt;mode&gt;</b>	1	Enable
	2	Query status
	3	Registration
	4	Erasure
<b>&lt;number&gt;</b>	Phone number in string type of forwarding address in format specified by <type>	
<b>&lt;type&gt;</b>	Type of address in integer format; default value is 145 when dialing string includes international access code character "+", otherwise 129	
<b>&lt;subaddr&gt;</b>	String type sub-address of format specified by <sattype>	
<b>&lt;sattype&gt;</b>	Type of sub-address in integer	

<b>&lt;class&gt;</b>	1	Voice
	2	Data
	4	FAX
	7	All telephony except SMS
	8	Short message service
	16	Data circuit sync
	32	Data circuit async
<b>&lt;time&gt;</b>	1...30	When "no reply" ( <b>&lt;reads&gt;</b> =no reply) is enabled or queried, this gives the time in seconds to wait before call is forwarded, default value is 20
<b>&lt;status&gt;</b>	0	Not active
	1	Active

### Example

```

AT+CCFC=0,3,"15021012496" // Register the destination number for unconditional call
                           forwarding (CFU)
OK
AT+CCFC=0,2 // Query the status of CFU without specifying <class>
+CCFC: 1,1,"+8615021012496",145
+CCFC: 1,4,"+8615021012496",145
+CCFC: 1,32,"+8615021012496",145
+CCFC: 1,16,"+8615021012496",145
OK
AT+CCFC=0,4 // Erase the registered CFU destination number
OK
AT+CCFC=0,2 // Query the status, no destination number
+CCFC: 0,7
OK

```

## 12.5. AT+CCUG Closed User Group Control

### AT+CCUG Closed User Group Control

Test Command	Response
AT+CCUG=?	OK
Read Command	Response
AT+CCUG?	+CCUG: <n>,<index>,<info>

	<b>OK</b>
Write Command <b>AT+CCUG=[&lt;n&gt;][,&lt;index&gt;[,&lt;info&gt;]]</b>	Response TA sets the closed user group supplementary service parameters as a default adjustment for all following calls. <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;n&gt;</b>	<u>0</u>	Disable CUG
	1	Enable CUG
<b>&lt;index&gt;</b>	<u>0</u> ...9	CUG index
	10	No index (preferred CUG taken from subscriber data)
<b>&lt;info&gt;</b>	<u>0</u>	Bo information
	1	Suppress OA (Outgoing Access)
	2	Suppress preferential CUG
	3	Suppress OA and preferential CUG

## 12.6. AT+CCWA Call Waiting Control

### AT+CCWA Call Waiting Control

Test Command <b>AT+CCWA=?</b>	Response <b>+CCWA:</b> (list of supported <n>s)  <b>OK</b>
Read Command <b>AT+CCWA?</b>	Response <b>+CCWA:</b> <n>  <b>OK</b>
Write Command <b>AT+CCWA=[&lt;n&gt;][,&lt;mode&gt;[,&lt;class&gt;]]</b>	Response TA controls the call waiting supplementary service. Activation, deactivation and status query are supported. If <mode><=2 and command successful <b>OK</b> If <mode>=2 and command successful <b>+CCWA:&lt;status&gt;,&lt;class1&gt;[&lt;CR&gt;&lt;LF&gt;+CCWA:&lt;status&gt;,&lt;class2&gt;[...]]</b>

	<p><b>OK</b></p> <p>If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b></p>
Reference GSM 07.07	

## Parameter

<b>&lt;n&gt;</b>	0	Disable presentation of an unsolicited result code
	1	Enable presentation of an unsolicited result code
<b>&lt;mode&gt;</b>	When <b>&lt;mode&gt;</b> parameter is not given, network is not interrogated	
	0	Disable
	1	Enable
	2	Query status
<b>&lt;class&gt;</b>	A sum of integers, each integer represents a class of information	
	1	Voice (telephony)
	2	Data (bearer service)
	4	FAX(facsimile)
	16	Data circuit sync
	32	Data circuit async
<b>&lt;status&gt;</b>	0	Disable
	1	Enable

## NOTES

- <status>**=0 should be returned only if service is not active for any **<class>** i.e. +CCWA: 0, 7 will be returned in this case.
- When **<mode>**=2, all active call waiting classes will be reported. In this mode the command is abortable by pressing any key.
- Unsolicited result code

When the presentation call waiting at the TA is enabled (and call waiting is enabled) and a terminating call set up during an established call, an unsolicited result code is returned:

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

Parameters

**<number>** Phone number in string type of calling address in format specified by **<type>**

**<type>** Type of address octet in integer format

129 Unknown type (ISDN format number)

145 International number type (ISDN format )

**<alpha>** Optional string type alphanumeric representation of **<number>** corresponding to the entry found in phone book

## Example

```
AT+CCWA=1,1 // Enable presentation of an unsolicited result code
OK
ATD10086; // Establish a call
OK
+CCWA: "02154450293",129,1 // Indication of a call that has been waiting
```

## 12.7. AT+CHLD Call Hold and Multiparty

### AT+CHLD Call Hold and Multiparty

Test Command <b>AT+CHLD=?</b>	Response <b>+CHLD:</b> (list of supported <n>s)  <b>OK</b>
Write Command <b>AT+CHLD=[&lt;n&gt;]</b>	Response TA controls the supplementary services call hold, multiparty and explicit call transfer. Calls can be put on hold, recovered, released, added to conversation and transferred. <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

#### Parameter

<n>	0	Terminate all held calls or UDUB (User Determined User Busy) for a waiting call. If a call is waiting, terminate the waiting call. Otherwise, terminate all held calls (if any)
	1	Terminate all active calls (if any) and accept the other call (waiting call or held call). It can not terminate active call if there is only one call
	1X	Terminate the specific call number X (X= 1-7)( active, waiting or held)
	2	Place all active calls on hold (if any) and accept the other call (waiting call or held call) as the active call
	2X	Place all active calls except call X (X= 1-7) on hold
	3	Add the held call to the active calls

**NOTE**



These supplementary services are only available to the teleservice 11 (Speech: Telephony).

### Example

```

ATD10086; // Establish a call
OK

+CCWA: "02154450293",129,1 // Indication of a call that has been waiting
AT+CHLD=2 // Place the active call on hold and accept the waiting call as
the active call
OK
AT+CLCC
+CLCC: 1,0,1,0,0,"10086",129,"" // The first call on hold
+CLCC: 2,1,0,0,0,"02154450293",129,"" // The second call becomes active
OK
AT+CHLD=21 // Place the active call except call X=1 on hold
OK
AT+CLCC
+CLCC: 1,0,0,0,0,"10086",129,"" // The first call becomes active
+CLCC: 2,1,1,0,1,"02154450293",129,"" // The second call on hold
OK
AT+CHLD=3 // Add a held call to the active calls in order to set up a
conference (multiparty) call
OK
AT+CLCC
+CLCC: 1,0,0,0,1,"10086",129,""
+CLCC: 2,1,0,0,1,"02154450293",129,""
OK
    
```

## 12.8. AT+CLIP Calling Line Identification Presentation

### AT+CLIP Calling Line Identification Presentation

Test Command  
**AT+CLIP=?**

Response  
**+CLIP:** (list of supported <n>s)

	<b>OK</b>
Read Command <b>AT+CLIP?</b>	Response <b>+CLIP: &lt;n&gt;,&lt;m&gt;</b>
	<b>OK</b>
Write Command <b>AT+CLIP=[&lt;n&gt;]</b>	Response TA enables or disables the presentation of the calling line identity (CLI) at the TE. It has no effect on the execution of the supplementary service CLIP in the network. <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;n&gt;</b>	0	Suppress unsolicited result codes
	1	Display unsolicited result codes
<b>&lt;m&gt;</b>	0	CLIP not provisioned
	1	CLIP provisioned
	2	Unknown

### NOTE

Unsolicited result code

When the presentation of the CLI at the TE is enabled (and calling subscriber allows), an unsolicited result code is returned after every RING (or **+CRING: <type>**) at a mobile terminating call.

**+CLIP: <number>, <type>,"",,<alphald>,<CLI validity>**

Parameters

**<number>** Phone number in string type of calling address in format specified by **<type>**

**<type>** Type of address octet in integer format;

129 Unknown type (ISDN format number)

145 International number type (ISDN format )

**<alphald>** String type alphanumeric representation of **<number>** corresponding to the entry found in phone book

**<CLI validity>** 0 CLI valid

1 CLI has been withheld by the originator

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

### Example

```
AT+CPBW=1,"02151082965",129,"QUECTEL"
OK
AT+QCLIP=1
OK
AT+CLIP=1
OK

RING

+CLIP: "02151082965",129,"","QUECTEL",0
```

## 12.9. AT+CLIR Calling Line Identification Restriction

### AT+CLIR Calling Line Identification Restriction

Test Command <b>AT+CLIR=?</b>	Response <b>+CLIR:</b> (list of supported <n>s)  <b>OK</b>
Read Command <b>AT+CLIR?</b>	Response <b>+CLIR:</b> <n>,<m>  <b>OK</b>
Write Command <b>AT+CLIR=[&lt;n&gt;]</b>	Response TA restricts or enables the presentation of the calling line identity (CLI) to the called party when originating a call. The command overrides the CLIR subscription (default is restricted or allowed) when temporary mode is provisioned as a default adjustment for all following outgoing calls. This adjustment can be revoked by using the opposite Command. <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

#### Parameter

<n>	(Parameter sets the adjustment for outgoing calls)
0	presentation indicator is used according to the subscription of the CLIR service
1	CLIR invocation
2	CLIR suppression

<b>&lt;m&gt;</b>	(Parameter shows the subscriber CLIR service status in the network)
0	CLIR not provisioned
1	CLIR provisioned in permanent mode
2	Unknown (e.g. no network, etc.)
3	CLIR temporary mode presentation restricted
4	CLIR temporary mode presentation allowed

## 12.10. AT+COLP Connected Line Identification Presentation

### AT+COLP Connected Line Identification Presentation

Test Command <b>AT+COLP=?</b>	Response <b>+COLP:</b> (list of supported <n>s)  <b>OK</b>
Read Command <b>AT+COLP?</b>	Response <b>+COLP:</b> <n>,<m>  <b>OK</b>
Write Command <b>AT+COLP=[&lt;n&gt;]</b>	Response TA enables or disables the presentation of the COL (Connected Line) at the TE for a mobile originating a call. It has no effect on the execution of the supplementary service COLR in the network. Intermediate result code is returned from TA to TE before any +CR or V.25ter responses.  <b>OK</b>
Reference GSM 07.07	

### Parameter

<b>&lt;n&gt;</b>	(Parameter sets/shows the result code presentation status in the TA)
0	Disable
1	Enable
<b>&lt;m&gt;</b>	(Parameter shows the subscriber COLP service status in the network)
0	COLP not provisioned
1	COLP provisioned
2	Unknown (e.g. no network, etc.)

**NOTE**

Intermediate result code

When enabled (and called subscriber allows), an intermediate result code is returned before any +CR or V.25ter responses:

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

Parameters

- <number>** Phone number in string type, format specified by **<type>**
- <type>** Type of address octet in integer format
  - 129 Unknown type(ISDN format number)
  - 145 International number type(ISDN format )
- <subaddr>** String type sub-address of format specified by **<satype>**
- <satype>** Type of sub-address octet in integer format (refer to GSM 04.08 sub clause 10.5.4.8)
- <alpha>** Optional string type alphanumeric representation of **<number>** corresponding to the entry found in phone book

**Example**

```
AT+CPBW=1,"02151082965",129,"QUECTEL"
OK
AT+QCOLP=1
OK
AT+COLP=1
OK
ATD02151082965;
+COLP: "02151082965",129,"",0,"QUECTEL"
OK
```

**12.11. AT+CPUC Price Per Unit and Currency Table**

AT+CPUC Price Per Unit and Currency Table	
Test Command <b>AT+CPUC=?</b>	Response <b>OK</b>
Read Command <b>AT+CPUC?</b>	Response <b>+CPUC: &lt;currency&gt;,&lt;ppu&gt;</b>  <b>OK</b>
Write Command <b>AT+CPUC=&lt;currency&gt;,&lt;ppu&gt;[,&lt;pass wd&gt;]</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference	

GSM 07.07

### Parameter

<b>&lt;currency&gt;</b>	String type; three-character currency code (e.g. "GBP", "DEM"); character set as specified by command select TE character set <b>+CSCS</b>
<b>&lt;ppu&gt;</b>	String type; price per unit; dot is used as a decimal Separator (e.g. "2.66")
<b>&lt;passwd&gt;</b>	String type; SIM PIN2

## 12.12. AT+CCWE Call Meter Maximum Event

### AT+CCWE Call Meter Maximum Event

Test Command <b>AT+CCWE=?</b>	Response <b>+CCWE:</b> (list of supported <b>&lt;mode&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CCWE?</b>	Response <b>+CCWE:</b> <b>&lt;mode&gt;</b>  <b>OK</b>
Write Command <b>AT+CCWE=[&lt;mode&gt;]</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR:</b> <b>&lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;mode&gt;</b>	<u>0</u>	Disable call meter warning event
	1	Enable call meter warning event

#### NOTE

Unsolicited result codes supported:

**+CCWV** Shortly before the ACM (Accumulated Call Meter) maximum value is reached, an unsolicited result code **+CCWV** will be sent, if enabled by this command. The warning is issued approximately when 5 seconds call time remains. It is also issued when starting a call if less than 5s call time remains

## 12.13. AT+CUSD Unstructured Supplementary Service Data

### AT+CUSD Unstructured Supplementary Service Data

Test Command <b>AT+CUSD=?</b>	Response <b>+CUSD:</b> (list of supported <n>s)  <b>OK</b>
Read Command <b>AT+CUSD?</b>	Response <b>+CUSD:</b> <n>  <b>OK</b>
Write Command <b>AT+CUSD=[&lt;n&gt;[,&lt;str&gt;[,&lt;dcs&gt;]]</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;n&gt;</b>	A numeric parameter which indicates control of the unstructured supplementary service data
0	Disable the result code presentation in the TA
1	Enable the result code presentation in the TA
2	Cancel session (not applicable to read command response)
<b>&lt;str&gt;</b>	String type USSD-string
<b>&lt;dcs&gt;</b>	Cell Broadcast Data Coding Scheme in integer format (default 0)

### Example

```
AT+CSCS="UCS2"
OK
AT+CUSD=1,"002A0031003000300023"
+CUSD:
1,"0031002E59296C14000A0032002E65B095FB000A0033002E8BC15238000A0034002E5F6979680
00A0035002E751F6D3B000A0036002E5A314E50000A0037002E5E385DDE98CE91C7000A002A002
E900051FA000A", 72
OK
```

## 12.14. AT+CSSN Supplementary Services Notification

AT+CSSN Supplementary Services Notification	
Test Command <b>AT+CSSN=?</b>	Response <b>+CSSN:</b> (list of supported <n>s), (list of supported <m>s)  <b>OK</b>
Read Command <b>AT+CSSN?</b>	Response <b>+CSSN:</b> <n>,<m>  <b>OK</b>
Write Command <b>AT+CSSN=[&lt;n&gt;[,&lt;m&gt;]]</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;n&gt;</b>	A numeric parameter which indicates whether to show the <b>+CSSI:&lt;code1&gt;[,&lt;index&gt;]</b> result code presentation status after a mobile originated call setup 0      Disable 1      Enable
<b>&lt;m&gt;</b>	A numeric parameter which indicates whether to show the <b>+CSSU:&lt;code2&gt;</b> result code presentation status during a mobile terminated call setup or during a call, or when a forward check supplementary service notification is received 0      Disable 1      Enable
<b>&lt;code1&gt;</b>	0      Unconditional call forwarding is active 1      Some of the conditional call forwarding are active 2      Call has been forwarded 3      Call is waiting 4      This is a CUG call (also <index> present) 5      Outgoing calls are barred 6      Incoming calls are barred 7      CLIR suppression rejected
<b>&lt;index&gt;</b>	Closed user group index
<b>&lt;code2&gt;</b>	0      This is a forwarded call



# 13 Audio Commands

## 13.1. ATL Set Monitor Speaker Loudness

### ATL Set Monitor Speaker Loudness

Execution Command	Response
<b>ATL&lt;value&gt;</b>	<b>OK</b>

Reference  
V.25ter

#### Parameter

<b>&lt;value&gt;</b>	0	Low speaker volume
	1	Low speaker volume
	2	Medium speaker volume
	3	High speaker volume

#### NOTE

The two commands **ATL** and **ATM** are implemented only for V.25 compatibility reasons and have no effect.

## 13.2. ATM Set Monitor Speaker Mode

### ATM Set Monitor Speaker Mode

Execution Command	Response
<b>ATM&lt;value&gt;</b>	<b>OK</b>

Reference  
V.25ter

## Parameter

<value>	0	Speaker is always off
	1	Speaker is on until TA inform TE that carrier has been detected
	2	Speaker is always on when TA is off-hook

### NOTE

The two commands **ATL** and **ATM** are implemented only for V.25 compatibility reasons and have no effect.

## 13.3. AT+VTD Tone Duration

### AT+VTD Tone Duration

Test Command <b>AT+VTD=?</b>	Response <b>+VTD:</b> ( list of supported <internalduration>s ),( list of supported <duration>s )  <b>OK</b>
Read Command <b>AT+VTD?</b>	Response <b>+VTD:</b> <internalduration>,<duration>  <b>OK</b>
Write Command <b>AT+VTD=&lt;internalduration&gt;[,&lt;duration&gt;]</b>	Response This command refers to an integer <internalduration> that defines the length of tones emitted as a result of the <b>+VTS</b> command. This does not affect the D command.  <b>OK</b>
Reference GSM 07.07	

## Parameter

<internalduration>	1-255	Duration between two tones in 1/10 second
<duration>	0	Do not set duration of every single tone.
	1-100000	Duration of every single tone in 1 ms

## 13.4. AT+VTS DTMF and Tone Generation

### AT+VTS DTMF and Tone Generation

Test Command <b>AT+VTS=?</b>	Response <b>+VTS:</b> (list of supported <b>&lt;dtmf&gt;</b> s), ,(list of supported <b>&lt;duration&gt;</b> s)  <b>OK</b>
Write Command <b>AT+VTS=&lt;dtmf-string&gt;</b>	Response This command allows the transmission of DTMF tones and arbitrary tones in voice mode. These tones may be used (for example) when announcing the start of a recording period. <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;dtmf-string&gt;</b>	It has a max length of 20 characters, must be entered between double quotes (" ") and consists of combinations of the following separated by commas. But a single character does not require quotes 1) <b>&lt;dtmf&gt;</b> A single ASCII characters in the set 0-9, #, *, A-D. This is interpreted as a sequence of DTMF tones whose duration is set by the <b>+VTD</b> command 2) <b>{&lt;dtmf&gt;, &lt;duration&gt;}</b> This is interpreted as a DTMF tone whose duration is determined by <b>&lt;duration&gt;</b>
<b>&lt;duration&gt;</b>	Duration of the tone in 1/10 seconds range :1-255

### Example

```

ATD10086;           // Establish a call
OK
AT+VTS=1           // Send a single DTMF tone according to the prompts of voice
OK
    
```

## 13.5. AT+CALM Alert Sound Mode

### AT+CALM Alert Sound Mode

Test Command <b>AT+CALM=?</b>	Response <b>+CALM:</b> (list of supported <mode>s)  <b>OK</b>
Read Command <b>AT+CALM?</b>	Response <b>+CALM:</b> <mode>  <b>OK</b>
Write Command <b>AT+CALM=&lt;mode&gt;</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

#### Parameter

<mode>	0	Normal mode
	1	Silent mode (all sounds from ME are prevented)

## 13.6. AT+CRSL Ringer Sound Level

### AT+CRSL Ringer Sound Level

Test Command <b>AT+CRSL=?</b>	Response <b>+CRSL:</b> (list of supported <level>s)  <b>OK</b>
Read Command <b>AT+CRSL?</b>	Response <b>+CRSL:</b> <level>  <b>OK</b>
Write Command <b>AT+CRSL=&lt;level&gt;</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

**Parameter**

**<level>** Integer type value(0-100) with manufacturer specific range (Smallest value represents the lowest sound level)

**13.7. AT+CLVL Loud Speaker Volume Level**

**AT+CLVL Loud Speaker Volume Level**

Test Command <b>AT+CLVL=?</b>	Response <b>+CLVL:</b> (list of supported <b>&lt;level&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CLVL?</b>	Response <b>+CLVL:</b> <b>&lt;level&gt;</b>  <b>OK</b>
Write Command <b>AT+CLVL=&lt;level&gt;</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

**Parameter**

**<level>** Integer type value(0-100) with manufacturer specific range (Smallest value represents the lowest sound level)

**13.8. AT+CMUT Mute Control**

**AT+CMUT Mute Control**

Test Command <b>AT+CMUT=?</b>	Response <b>+CMUT:</b> (list of supported <b>&lt;n&gt;</b> s)  <b>OK</b>
Read Command <b>AT+CMUT?</b>	Response <b>+CMUT:</b> <b>&lt;n&gt;</b>

	<b>OK</b>
Write Command <b>AT+CMUT=&lt;n&gt;</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;n&gt;</b>	<u>0</u>	Mute off
	1	Mute on

## 13.9. AT+QSIDET Change the Side Tone Gain Level

### AT+QSIDET Change the Side Tone Gain Level

Test Command <b>AT+QSIDET=?</b>	Response <b>+QSIDET:</b> (list of supported <b>&lt;gainlevel&gt;s</b> )  <b>OK</b>
Read Command <b>AT+QSIDET?</b>	Response <b>+QSIDET(NORMAL_AUDIO): &lt;gainlevel&gt;</b>  <b>OK</b> <b>+QSIDET(HEADSET_AUDIO): &lt;gainlevel&gt;</b>  <b>OK</b>
Write Command <b>AT+QSIDET=&lt;gainlevel&gt;</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

<b>&lt;gainlevel&gt;</b>	Range is 0 - 255
--------------------------	------------------



NOTES

<gainlevel> value is related to specific channel.

## 13.10. AT+QMIC Change the Microphone Gain Level

### AT+QMIC Change the Microphone Gain Level

Test Command <b>AT+QMIC=?</b>	Response <b>+QMIC:</b> (list of supported <channel>s) , (list of supported <gainlevel>s)  <b>OK</b>
Read Command <b>AT+QMIC?</b>	Response <b>+QMIC:</b> <gainlevel(Normal_Mic)>,<gainlevel(Headset_Mic)>,<gainlevel(Loudspeaker_Mic)>  <b>OK</b>
Write Command <b>AT+QMIC=&lt;channel&gt;,&lt;gainlevel&gt;</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference	

#### Parameter

<channel>	0	Normal microphone
	1	Headset microphone
	2	Loudspeaker microphone
<gainlevel>	Range is 0 - 15	

# 14 Hardware Related Commands

## 14.1. AT+CCLK Clock

AT+CCLK Clock	
Test Command <b>AT+CCLK=?</b>	Response <b>OK</b>
Read Command <b>AT+CCLK?</b>	Response <b>+CCLK: &lt;time&gt;</b>  <b>OK</b>
Write Command <b>AT+CCLK=&lt;time&gt;</b>	Response <b>OK</b> If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference GSM 07.07	

### Parameter

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

### Example

```
AT+CCLK? // Query the local time
+CCLK: "08/01/04, 00:19:43+00"
OK
```



## 14.2. AT+CBC Battery Charge

AT+CBC Battery Charge	
Test Command AT+CBC=?	Response +CBC: (list of supported <bc>s),(list of supported <bcl>s),(voltage)  OK
Execution Command AT+CBC	Response +CBC: <bc>, <bcl>,<voltage>  OK If error is related to ME functionality: +CME ERROR: <err>
Reference GSM 07.07	

### Parameter

<bc>	Charge status
0	ME is not charging
1	ME is charging
2	Charging has finished
<bcl>	Battery connection level
1...100	Battery has 1-100 percent of capacity remaining vent
<voltage>	Battery voltage(mV)

## 14.3. AT+QTEMP Set Temperature Detection Mode or Query

### Temperature

#### AT+QTEMP Set Critical Temperature Operating Mode or Query Temperature

Test Command <b>AT+QTEMP=?</b>	Response <b>+QTEMP:</b> (list of supported <mode>s), (list of supported <Temperature>s)  <b>OK</b>
Read Command <b>AT+QTEMP?</b>	Response <b>QTEMP:</b> <mode><Temperature>  <b>OK</b>
Write Command <b>AT+ QTEMP=&lt;mode&gt;</b>	Response <b>OK</b> <b>ERROR</b>
Reference	

#### Parameter

<b>&lt;mode&gt;</b>	<u>0</u>	Disable to query temperature
	1	Enable to query temperature
	2	Reserved
<b>&lt;Temperature&gt;</b>	Range is from -40°C ~ +90°C.	

## 14.4. AT+QSCCLK Configure Slow Clock

### AT+QSCCLK Configure Slow Clock

Test Command <b>AT+QSCCLK=?</b>	Response <b>+QSCCLK:</b> (list of supported <n>s)  <b>OK</b>
Read Command <b>AT+QSCCLK?</b>	Response <b>+QSCCLK:</b> <n>  <b>OK</b>
Write Command <b>AT+QSCCLK=&lt;n&gt;</b>	Response <b>OK</b>
Reference	

### Parameter

<n>	0	Disable slow clock
	1	Enable slow clock, it is controlled by DTR
	2	The module decides when it enters sleep mode. When there is no data on serial port in 5 seconds, module can enter sleep mode. Otherwise, it will quit from sleep mode

# 15 Others Commands

## 15.1. A/ Re-issues the Last Command Given

### A/ Re-issues the Last Command Given

Execution Command <b>A/</b>	Response Re-issues the previous command
Reference V.25ter	

#### NOTE

This command does not work when the serial multiplexer is active. It does not have to end with terminating character.

#### Example

```
AT
OK
A/ // Re-issues the previous command
OK
```

## 15.2. ATE Set Command Echo Mode

### ATE Set Command Echo Mode

Execution Command <b>ATE&lt;value&gt;</b>	Response This setting determines whether or not the TA echoes characters received from TE during command state. <b>OK</b>
Reference V.25ter	

**Parameter**

<value>	0	Echo mode off
	1	Echo mode on

### 15.3. ATS3 Set Command Line Termination Character

#### ATS3 Set Command Line Termination Character

Read Command ATS3?	Response <n>  OK
Write Command ATS3=<n>	Response This parameter setting determines the character recognized by TA to terminate an incoming command line. The TA also returns this character in output. OK
Reference V.25ter	

**Parameter**

<n>	0-13-127	Command line termination character (Default 13=<CR>)
-----	----------	------------------------------------------------------

### 15.4. ATS4 Set Response Formatting Character

#### ATS4 Set Response Formatting Character

Read Command ATS4?	Response <n>  OK
Write Command ATS4=<n>	Response This parameter setting determines the character generated by the TA for result code and information text. OK
Reference V.25ter	

**Parameter**

**<n>**      0-10-127      Response formatting character (Default 10=<LF>)

**15.5. AT55 Set Command Line Editing Character**

**AT55 Set Command Line Editing Character**

Read Command <b>AT55?</b>	Response <b>&lt;n&gt;</b>  <b>OK</b>
Write Command <b>AT55=&lt;n&gt;</b>	Response This parameter setting determines the character recognized by TA as a request to delete the immediately preceding character from the command line. <b>OK</b>
Reference V.25ter	

**Parameter**

**<n>**      0-8-127      Response editing character (Default 8=<Backspace>)

**15.6. AT+DS V.42bis Data Compression Control**

**AT+DS V.42bis Data Compression Control**

Test Command <b>AT+DS=?</b>	Response <b>+DS:</b> (list of supported <b>&lt;p0&gt;s</b> ), (list of supported <b>&lt;n&gt;s</b> ), (list of supported <b>&lt;p1&gt;s</b> ), (list of supported <b>&lt;p2&gt;s</b> )  <b>OK</b>
Read Command <b>AT+DS?</b>	Response <b>+DS:</b> <b>&lt;p0&gt;,&lt;n&gt;,&lt;p1&gt;,&lt;p2&gt;</b>  <b>OK</b>
Write Command <b>AT+DS=[&lt;p0&gt;[,&lt;n&gt;[,&lt;p1&gt;[,&lt;p2&gt;]]]]</b>	Response This parameter setting determines the possible data

	compression mode by TA at the compression negotiation with the remote TA after a call set up. <b>OK</b>
Reference V.25ter	

### Parameter

<p0>	0	NONE
<n>	<u>0</u>	Allow negotiation of <p0> down
	1	Do not allow negotiation of <p0> - disconnect on difference
<p1>	<u>512-4096</u>	Dictionary size
<p2>	6-250	Maximum string size (Default value is 6)

### NOTES

1. This command is only for data call.
2. GSM transmits the data transparently. The remote TA may support this compression.
3. This command must be used in conjunction with command **AT+CRLP** to enable compression (**AT+CRLP=X,X,X,X,1,X**).

## 15.7. AT+DR V.42bis Data Compression Reporting Control

### AT+DR V.42bis Data Compression Reporting Control

Test Command <b>AT+DR=?</b>	Response <b>+DR:</b> (list of supported <value>s)  <b>OK</b>
Read Command <b>AT+DR?</b>	Response <b>+DR:</b> <value>  <b>OK</b>
Write Command <b>AT+DR=[&lt;value&gt;]</b>	Response This parameter setting determines whether or not intermediate result code of the current data compressing is reported by TA to TE after a connection is established. <b>OK</b>
Reference V.25ter	

**Parameter**

<value>    0            Reporting disabled

**15.8. AT+QRIMODE    Set RI Time**

<b>AT+QRIMODE    Set RI Time</b>	
Test Command <b>AT+QRIMODE=?</b>	Response <b>+QRIMODE:</b> (list of supported <timemode>s)  <b>OK</b>
Read Command <b>AT+QRIMODE?</b>	Response <b>+QRIMODE:</b> <timemode>  <b>OK</b>
Write Command <b>AT+QRIMODE=&lt;timemode&gt;</b>	Response <b>OK</b>  If error is related to ME functionality: <b>+CME ERROR: &lt;err&gt;</b>
Reference	

**Parameter**

<timemode>	Time mode
<u>0</u>	Receive SMS, RI 120ms low pulse, other URC RI 120ms low pulse
1	Receive SMS, RI 120ms low pulse, other URC RI 50ms low pulse
2	When a SMS is received, RI changes to LOW and holds low level for 120ms, other URCs have no effect on RI.



# 16 Appendix A Reference

**Table 3: Related Documents**

SN	Document name	Remark
[1]	V.25ter	Serial asynchronous automatic dialling and control
[2]	GSM 07.07	Digital cellular telecommunications (Phase 2+); AT command set for GSM Mobile Equipment (ME)
[3]	GSM 07.05	Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE- DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)
[4]	GSM 07.10	Support GSM 07.10 multiplexing protocol
[5]	GSM_TCPIP_Application_Note	GSM TCPIP Application Note
[6]	GPRS_Startup_User_Guide	GPRS Startup User Guide
[7]	GSM_MUX_Application_Note	MUX Application Note
[8]	SMS_Application_Note	SMS Application Note
[9]	M35_Hardware_Design	M35 Hardware Design

**Table 4: Terms and Abbreviations**

Abbreviation	Description
AMR	Adaptive Multi-Rate
ME	Mobile Equipment
TA	Terminal Adapter
MS	Mobile Station
DCE	Data Communication Equipment

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TE	Terminal Equipment
DTE	Data Terminal Equipment
RTS/CTS	Request To Send/Clear To Send
GPRS	General Packet Radio Service
DCD	Dynamic Content Delivery
DTR	Data Terminal Ready
CSD	Circuit Switch Data
PSC	Primary Synchronization Code
PDP	Packet Data Protocol
TCP	Transmission Control Protocol
UDP	User Datagram Protocol

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