AT Commands Interface Guide
for IP Connectivity

Revision: 003
Date: January 2004
# Document History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>History of the evolution</th>
</tr>
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<tbody>
<tr>
<td>001</td>
<td>21 Jul 03</td>
<td>Creation</td>
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<tr>
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<tr>
<td></td>
<td></td>
<td>- New parameter TCPTXDELAY.</td>
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<td>- New command AT#DELFLASH.</td>
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<td></td>
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<td>- New error message for SIM removal.</td>
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<td></td>
<td></td>
<td>- Max. string length detail for parameter CALLSCREENNUM.</td>
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<td></td>
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<td>Updates for Open AT 2.10 delivery</td>
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<td></td>
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<td>- V2.10 changes for AT#RECi and AT#CRECi parameters: added commands AT#RECiADD and AT#CRECiADD.</td>
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<td>- V2.10 update for the AT#SMTPUN and AT#SMTPPW parameters.</td>
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<td>- (*) Added new error code 35841 (GPRS session lost).</td>
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<td>- (*) Added new error code 37123 (WMUX).</td>
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Overview

The aim of this document is to describe the AT commands dedicated to the implementation of Wavecom IP connectivity product on Wavecom modules WISMO 24x6B.

It applies to eDsoft-w302_V210.

The following improvements have been performed for this revision:

- WMUX compatibility,
- GPRS network loss management,
- AT# interpreter
1 Introduction

This document presents WAVECOM AT commands dedicated to IP connectivity.

1.1 Software upgrade

Here are the actions to perform to upgrade from a previous eDsoft-w302 to eDsoft-w302_V210 on a WISMO module:

- Delete EEPROM with AT#DELFFLASH command
- Download new binary software with AT+WDWL command and XMODEM protocol
- Reset module with AT+CFUN=1 command

1.2 Definitions and abbreviations

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<th>Description</th>
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<tr>
<td>APN</td>
<td>Access Point Name</td>
</tr>
<tr>
<td>&lt;DLE&gt;</td>
<td>Escape character</td>
</tr>
<tr>
<td>DNS</td>
<td>Domain Name Server</td>
</tr>
<tr>
<td>&lt;ETX&gt;</td>
<td>Escape character</td>
</tr>
<tr>
<td>FTP</td>
<td>File Transfer Protocol</td>
</tr>
<tr>
<td>GPRS</td>
<td>General Packet Radio Service</td>
</tr>
<tr>
<td>GSM</td>
<td>Global System for Mobile communication</td>
</tr>
<tr>
<td>IP</td>
<td>Internet Protocol</td>
</tr>
<tr>
<td>ISP</td>
<td>Internet Service Provider</td>
</tr>
<tr>
<td>POP</td>
<td>Post Office Protocol</td>
</tr>
<tr>
<td>PPP</td>
<td>Point-to-Point Protocol</td>
</tr>
<tr>
<td>PSTN</td>
<td>Public Switched Telephone Network</td>
</tr>
<tr>
<td>SMTP</td>
<td>Simple Mail Transfer Protocol</td>
</tr>
<tr>
<td>Stack</td>
<td>Low-level software</td>
</tr>
<tr>
<td>TCP</td>
<td>Transmission Control Protocol</td>
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1.3 Presentation rules

In the following, the AT commands are presented with as much precision as possible, through three paragraphs. A “Description” paragraph provides general information on the AT command (or response) behaviour. A “Syntax” paragraph describes the way to use it, the possible answers, through a readable format. A “Defined values” paragraph provides parameters values, as well for the AT command as for the corresponding responses.
2 Dialing Services

2.1 Parameters definition

2.1.1 ANSWERMODE

• Definition
  The TCP/IP stack manages incoming calls. This parameter defines how the TCP/IP stack will behave when receiving an incoming call.

• Setting / getting
  Set value: AT#ANSWERMODE=<Value>
  Get value: AT#ANSWERMODE? or AT#VPHY, AT#VALL

• Legal values
  o 0: (Ignore) ignores the incoming call. In this case, it is the responsibility of the host to accept/not accept the incoming call by issuing the AT#ACCEPT command.
  o 1: (Automatic Answer) The TCP/IP stack goes off hook and accepts the incoming call. As described below, the calling number must match the one specified in the CALLSCREENNUM parameter. The RINGCOUNT parameter shall be > 0
  o 2: (Static Callback) The TCP/IP stack ignores the incoming call and then automatically dials (DIALN1 or DIALN2) by issuing an AT#CONNECTIONSTART command. As described below, the calling number must match the one specified in the CALLSCREENNUM parameter. The RINGCOUNT parameter shall be > 0. It also depends on the format of the caller phone number.
  o 3: (Dynamic Callback) The TCP/IP stack ignores the incoming call and then automatically dials the calling number by issuing an AT#CONNECTIONSTART command. For this feature, the CallerID service is mandatory. As described below, the calling number must match the one specified in the CALLSCREENNUM parameter. You may check if the caller phone number is completely transmitted.

• Default value
  0

• Note
  The ANSWERMODE parameter must be configured in accordance with the ATS0 configuration for not interacting.
2.1.2 CALLBACKTIMER

• Definition
This parameter defines the number of seconds the TCP/IP stack will wait before an automatic callback operation occurs after receiving an incoming call. It only applies when the ANSWERMODE parameter is set to an automatic callback mode (value>1). This timer starts after the end of the ringing signal.

• Setting / getting
Set value : AT#CALLBACKTIMER=<Value>
Get value : AT# CALLBACKTIMER? or AT#VPHY, AT#VALL

• Legal values
Integer between 2 and 255 inclusive. This timer is set in seconds.

• Default value
2

2.1.3 CALLSCREENNUM

• Definition
When receiving an incoming call, the caller identification (Caller ID) service allows the TCP/IP stack to identify the phone number of the remote caller. This information is helpful in preventing unauthorized callers to trigger actions on the TCP/IP stack.
This parameter allows the user to filter the incoming calls when the ANSWERMODE parameter is set to an automatic mode (value>0). This filtering doesn't apply when the ANSWERMODE parameter is set to 0, in this case it is the hosts responsibility to accept or reject the incoming call. If an incoming phone number is unauthorized, the TCP/IP stack will ignore it.

• Setting / getting
Set value : AT#CALLSCREENNUM=<Value>
Get value : AT#CALLSCREENNUM? or AT#VPHY, AT#VALL

• Legal values
  o 0 (zero): No remote caller authorized
  o * (all): No filtering is applied on incoming calls. All the remote phone numbers are authorized. This value must be set when wanting to receive incoming calls while the Caller ID service is not available.
  o Decimal phone number: Only the phone number configured here before is authorized for incoming calls. Alpha-numeric ASCII text string up to 64 characters.

• Default value
0
2.1.4 REDIALCOUNT

- **Definition**
  Indicates how many unsuccessful connection attempts the TCP/IP stack software will make before terminating the connection attempt.

- **Setting / getting**
  Set value: AT#REDIALCOUNT=<Value>
  Get value: AT#REDIALCOUNT? or AT#VPHY, AT#VALL

- **Legal values**
  Integer between 0 and 14, inclusive.
  If the value is set to 0, the TCP/IP stack software will not make any call retry.

- **Default value**
  5

2.1.5 REDIALDELAY

- **Definition**
  It controls the delay (in seconds), if any, that will exist between each call retry.

- **Setting / getting**
  Set value: AT#REDIALDELAY=<Value>
  Get value: AT#REDIALDELAY? or AT#VPHY, AT#VALL

- **Legal values**
  Integer between 5 and 14 inclusive.
  If this parameter is configured to 0, the TCP/IP stack software will attempt another connection immediately after terminating the previous unsuccessful attempt.

- **Default value**
  5

2.1.6 PHYTIMEOUT

- **Definition**
  Used by the TCP/IP stack software in order to terminate connections to the telephone line when a long period elapses without activity. “Without activity” is defined as a period when no data is transferred between the Internet and the TCP/IP stack software or between the TCP/IP stack software and the attached equipment. This timer prevents the telephone line from being tied up if for any reason if some part of the system becomes stuck.

- **Setting / getting**
  Set value: AT#PHYTIMEOUT=<Value>
  Get value: AT#PHYTIMEOUT? or AT#VPHY, AT#VALL

- **Legal values**
  Integer between 1 and 255 inclusive. This timer is set in minutes.

- **Default value**
  15

- **Return codes**
  TIMEOUT: The inactivity timer is reached, the Wavecom product ends the communication.
2.1.7 RINGCOUNT

• Definition
  This parameter defines the number of rings that will be waited before an automatic operation occurs when receiving an incoming call. This parameter only applies when the ANSWERMODE parameter is set to an automatic mode (value>0). If the ANSWERMODE parameter is used (value different from 0), the RINGCOUNT value shall be >0 for being able to use the feature

• Setting / getting
  Set value : AT#RINGCOUNT=<Value>
  Get value : AT#RINGCOUNT? or AT#VPHY, AT#VALL

• Legal values
  Integer between 0 and 15 inclusive.

• Default value
  0

• Note
  The RINGCOUNT parameter must be configured in accordance with the ATS0 configuration for not interacting.

2.1.8 DIALN1

• Definition
  Primary dial-up phone number to connect with the local ISP. Length depends on country.

• Setting / getting
  Set value : AT#DIALN1=<Value>
  Get value : AT#DIALN1? or AT#VPHY, AT#VALL

• Legal values
  Decimal phone numbers.

• Default value
  There is no default value for this parameter

2.1.9 DIALN2

• Definition
  Secondary dial-up number to connect with the local ISP. Length depends on country.

• Setting / getting
  Set value : AT#DIALN2=<Value>
  Get value : AT#DIALN2? or AT#VPHY, AT#VALL

• Legal values
  Decimal phone numbers.

• Default value
  There is no default value for this parameter
2.1.10 DIALSELECT

- **Definition**
The value of this parameter determines the number called to establish an Internet connection. It configures the TCP/IP stack software to use the primary dial-up number or the secondary dial-up number.

- **Setting / getting**
  Set value : AT# DIALSELECT =<Value>
  Get value : AT# DIALSELECT? or AT#VPHY, AT#VALL

- **Legal values**
  - 1: Use primary dial-up number
  - 2: Use secondary dial-up number

- **Default value**
  1

2.1.11 ISPPW

- **Definition**
  Password for the ISP account. When communication is initiated and once the physical (modem) connection has been established with the ISP, the TCP/IP stack software must provide the ISP with the password associated with the account to be used.

- **Setting / getting**
  Set value : AT#ISPPW=<Value>
  Get value : AT#ISPPW? or AT#VPPP, AT#VALL

- **Legal values**
  Alpha-numeric ASCII text string up to 64 characters

- **Default value**
  There is no default value for this parameter

2.1.12 ISPUN

- **Definition**
  User name of the ISP account. When communication is initiated and once the physical (modem) connection has been established with the ISP, the TCP/IP stack software must provide the ISP with the user name associated with the account to be used.

- **Setting / getting**
  Set value : AT#ISPUN=<Value>
  Get value : AT#ISPUN? or AT#VPPP, AT#VALL

- **Legal values**
  Alpha-numeric ASCII text string up to 64 characters

- **Default value**
  There is no default value for this parameter
2.1.13 PPPMODE

- **Definition**
  The TCP/IP stack can manage the access layer through different ways. This parameter selects the behavior the TCP/IP stack must run once the physical layer successfully established.

- **Setting / getting**
  Set value: AT#PPPMODE=<Value>
  Get value: AT#PPPMODE? or AT#VPPP, AT#VALL

- **Legal values**
  - 1: (Standard PPP) the TCP/IP stack behaves as a PPP client for outgoing calls and as a PPP server for incoming calls.
  - 2: (Reverse PPP) the TCP/IP stack behaves as a PPP server for outgoing calls and as a PPP client for incoming calls.
  - 3: (PPP client only) the TCP/IP stack always behaves as a PPP client for both outgoing and incoming calls.
  - 4: (PPP server only) the TCP/IP stack always behaves as a PPP server for both outgoing and incoming calls.
  - 9: (Specific) This case is reserved for specific behavior.

- **Default value**
  1

2.1.14 PPPMYIP

- **Definition**
  When the TCP/IP stack behaves as a PPP server (according to the PPPMODE parameter), it is in charge of the IP address attribution mechanism.
  Once the PPP authentication successfully achieved, the remote PPP peer asks the TCP/IP stack for an IP address. The related PPP layer, called IPCP, then suggests the peer an IP address previously stored in the TCP/IP stack parameters. If the remote accepts this address, the IP link is then established.
  This parameter defines the IP address to be attributed to the TCP/IP stack when the PPP Server mode is running.

- **Setting / getting**
  Set value: AT#PPPMYIP=<Value>
  Get value: AT#PPPMYIP? or AT#VPPP, AT#VALL

- **Legal values**
  32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx)

- **Default value**
  0.0.0.0
2.1.15 PPPPEERIP

- **Definition**
  When the TCP/IP stack behaves as a PPP server (according to the PPPMODE parameter), it is in charge of the IP address attribution mechanism.

  Once the PPP authentication successfully achieved, the remote PPP peer asks the TCP/IP stack for an IP address. The related PPP layer, called IPCP, then suggests the peer an IP address previously stored in the TCP/IP stack parameters. If the remote accepts this address, the IP link is then established.

  This parameter defines the IP address to be attributed to the remote PPP peer when the PPP Server mode is running.

- **Setting / getting**
  
  Set value: AT#PPPPEERIP=<Value>
  
  Get value: AT#PPPPEERIP? or AT#VPPP, AT#VALL

- **Legal values**
  32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx)

- **Default value**
  0.0.0.0

2.1.16 PPSPERVUN

- **Definition**
  When the TCP/IP stack behaves as a PPP server (according to the PPPMODE parameter), it checks the remote PPP client login/password before to grant access.

  This parameter defines the login that must be specified by the remote PPP client.

- **Setting / getting**
  
  Set value: AT#PPSPERVUN=<Value>
  
  Get value: AT#PPSPERVUN? or AT#VPPP, AT#VALL

- **Legal values**
  Alpha-numeric ASCII text string up to 64 characters

- **Default value**
  There is no default value for this parameter

2.1.17 PPSPERVPW

- **Definition**
  When the TCP/IP stack behaves as a PPP server (according to the PPPMODE parameter), it checks the remote PPP client login/password before to grant access.

  This parameter defines the password that must be specified by the remote PPP client.

- **Setting / getting**
  
  Set value: AT#PPSPERVPW=<Value>
  
  Get value: AT#PPSPERVPW? or AT#VPPP, AT#VALL

- **Legal values**
  Alpha-numeric ASCII text string up to 64 characters

- **Default value**
  There is no default value for this parameter
2.1.18 APNPW

- **Definition**
  Access Point Name password parameter coming with the APNUN from the GSM operator for providing GPRS access.

- **Setting / getting**
  Set value: AT#APNPW=<Value>
  Get value: AT#APNPW? or AT#VGPRS, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 120 characters.

- **Default value**
  There is no default value for this parameter

2.1.19 APNSERV

- **Definition**
  Access Point Name parameter coming from the GSM operator for providing GPRS access.

- **Setting / getting**
  Set value: AT#APNSERV=<Value>
  Get value: AT#APNSERV? or AT#VGPRS, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 120 characters.

- **Default value**
  There is no default value for this parameter

2.1.20 APNUN

- **Definition**
  Access Point Name Username parameter coming with the APNPW from the GSM operator for providing GPRS access.

- **Setting / getting**
  Set value: AT#APNUN=<Value>
  Get value: AT#APNUN? or AT#VGPRS, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 120 characters.

- **Default value**
  There is no default value for this parameter

2.1.21 GPRSCID

- **Definition**
  PDP context identifier which specifies a particular PDP context definition. This parameter is local and may be used in other PDP context-related commands.

- **Setting / getting**
  Set value: AT#GPRSCID=<Value>
  Get value: AT#GPRSCID? or AT#VGPRS, AT#VALL

- **Legal values**
  Numeric between 1 and 4 inclusive

- **Default value**
  1
2.1.22 GPRSMODE

- **Definition**
  Configure the activation of the Wavecom software for switching between GSM or GPRS.

- **Setting / getting**
  - Set value: AT#GPRSMODE=<Value>
  - Get value: AT#GPRSMODE? or AT#VGPRS, AT#VALL

- **Legal values**
  - 0: The Wavecom software is configured for a GSM use
  - 1: The Wavecom software is configured for a GPRS use

- **Default value**
  - 1

2.2 Incoming call management

2.2.1 Answer incoming call #ACCEPT

2.2.1.1 **Description**
This command directs the TCP/IP stack to answer an incoming call. When the TCP/IP stack receives an incoming call, it sends over the serial port the “RING” messages. Depending on the value of the ANSWERMODE parameter the TCP/IP stack may answer automatically or not. If ANSWERMODE is set to 0, it is the host that is responsible for answering the incoming call. Once the physical layer is up, the TCP/IP stack runs the applicable protocol as specified in the PPPMODE parameter. The AT#CONNECTIONSTOP command allows to on hook and close the connection.

2.2.1.2 **Syntax**

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#ACCEPT</td>
<td>OK                                Note: beginning of the call setting process</td>
</tr>
<tr>
<td></td>
<td>CONNECT &lt;speed&gt;                    Note: Modem speed negotiated between both</td>
</tr>
<tr>
<td></td>
<td>xxx.xxx.xxx.xxx                     Note: IP address indication attributed to the</td>
</tr>
<tr>
<td></td>
<td>PPP OK                             Note: The software is ready to run IP</td>
</tr>
<tr>
<td></td>
<td>Note: The modem handshaking process with the remote host is interrupted or</td>
</tr>
<tr>
<td></td>
<td>unsuccessful.                      unsuccessful.</td>
</tr>
</tbody>
</table>

AT#ACCEPT

- **Note:** Manually acceptance of an incoming call (incoming call)
<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#ACCEPT</td>
<td>PPP ERROR</td>
</tr>
<tr>
<td>Note: Manually acceptance of an incoming call (incoming call)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note: The PPP negotiation has failed (check ISPUN, ISPPW, PPPMODE and the configuration of the PPP peer)</td>
</tr>
</tbody>
</table>

### 2.2.1.3 List of parameters
- Read parameters
  - ANSWERMODE
  - IPSPW
  - ISPUN
  - PPPMODE
  - PPPMYIP
  - PPPPEER (if PPPMODE is set in server mode)
  - PPPPEERIP
  - PPPSEND_PW
  - PPPSEND_UN

### 2.2.2 Stop communication #CONNECTIONSTOP

#### 2.2.2.1 Description
This command directs the TCP/IP stack to end a GPRS or GSM communication previously established with a START command or AT#ACCEPT.

#### 2.2.2.2 Syntax
Command syntax: AT#CONNECTIONSTOP

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#CONNECTIONSTOP</td>
<td>OK</td>
</tr>
<tr>
<td>Note: Disconnect</td>
<td>Note: Phone line is released</td>
</tr>
</tbody>
</table>

#### 2.2.2.3 List of parameters
No TCP-IP parameter is used for the execution of this command.

### 2.2.3 Start communication #CONNECTIONSTART

#### 2.2.3.1 Description
This command directs the TCP/IP stack to dial out and establish the connection.
Upon receiving this signal, the TCP/IP stack automatically initiates a complete connection session according to the GPRSMODE parameter, selecting the GSM or GPRS mode.
- In GSM mode, the TCP/IP stack will dial the number according to the Dial Option parameter (DIALN1 or DIALN2 depending on DIALSELECT). If an error occurs, the TCP/IP stack automatically attempts according to the REDIALCOUNT parameter. Once the physical layer is up, the TCP/IP
stack runs the applicable protocol as specified in the PPPMODE parameter.
- In GPRS mode, the TCP/IP stack will establish a GPRS session with the
  APN using APNUN, APNPW, GPRSCID parameter. Once the GPRS link is
  up, the product is connected to the Internet. The AT#CONNECTIONSTOP
  command allows to on hook and close the connection.

**Important note:** GPRS attachment must be performed before a
CONNECTIONSTART command.

### 2.2.3.2 Syntax

**Command syntax:** AT#CONNECTIONSTART

<table>
<thead>
<tr>
<th>Command (GSM mode)</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#CONNECTIONSTART</td>
<td>DIALING</td>
</tr>
<tr>
<td><em>Note: Request connection to GSM network</em></td>
<td></td>
</tr>
<tr>
<td>2124560123</td>
<td>Note: The phone line is available</td>
</tr>
<tr>
<td>213.192.200.4</td>
<td>Note: IP address attributed to the TCP/IP stack</td>
</tr>
<tr>
<td>Ok_Info_Ppp</td>
<td>Note: As soon as the TCP/IP stack software displays this message, it is ready to receive commands.</td>
</tr>
<tr>
<td>AT#CONNECTIONSTART</td>
<td>BUSY</td>
</tr>
<tr>
<td><em>Note: A busy signal is detected on the remote site.</em></td>
<td></td>
</tr>
<tr>
<td>TCP/IP stack will wait REDIALDELAY seconds and then dials again. This re-dialing will continue until success or until the number of call retries defined in parameter REDIALCOUNT has been reached.</td>
<td></td>
</tr>
<tr>
<td>AT#CONNECTIONSTART</td>
<td>NO ANSWER</td>
</tr>
<tr>
<td><em>Note: There is no response from the remote site.</em></td>
<td></td>
</tr>
<tr>
<td>TCP/IP stack will wait REDIALDELAY seconds and then dials again. This re-dialing will continue until success or until the number of call retries defined in parameter REDIALCOUNT has been reached.</td>
<td></td>
</tr>
<tr>
<td>AT#CONNECTIONSTART</td>
<td>NO CARRIER</td>
</tr>
<tr>
<td><em>Note: The modem handshaking process with the remote host is interrupted or unsuccessful.</em></td>
<td></td>
</tr>
<tr>
<td>TCP/IP stack will wait REDIALDELAY seconds and then dials again. This re-dialing will continue until success or until the number of call retries defined in parameter REDIALCOUNT has been reached.</td>
<td></td>
</tr>
<tr>
<td>Command (GSM mode)</td>
<td>Possible responses</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------</td>
</tr>
</tbody>
</table>
| AT#CONNECTIONSTART | #CME ERROR: 37120  
#CME ERROR: 37121  
#CME ERROR: 28980  
#CME ERROR: 28981  
Note (only one response at a time): The PPP negotiation has failed (check ISPUN, ISPPW and PPPMODE)  
See paragraph 9.2. |
| AT#CONNECTIONSTART | #CME ERROR: 35865  
Note: The product is not registered on the network |
| AT#CONNECTIONSTART | #CME ERROR: 35840  
Note: The product is already running (host is connected) |

<table>
<thead>
<tr>
<th>Command (GPRS mode)</th>
<th>Possible responses</th>
</tr>
</thead>
</table>
| AT#CONNECTIONSTART  | 213.192.200.4  
Note: Request connection to GPRS network  
Note: IP address attributed to the TCP/IP stack  
Ok_Info_GprsActivation  
Note: GPRS session established and product connected to the Internet |
| AT#CONNECTIONSTART  | #CME ERROR: 35866  
Note: All connection attempts will return this message if the GPRS session can not be established |
| AT#CONNECTIONSTART  | #CME ERROR: 35865  
Note: The product is not registered on the network |
| AT#CONNECTIONSTART  | #CME ERROR: 35868  
Note: Aborted GPRS connection, check APN parameters. |

2.2.3.3 List of parameters
- Read parameters
  FOR GSM MODE:
  DIALN1
  DIALN2
  DIALSELECT
  ISPPW
  ISPUN
  REDIALCOUNT
  REDIALDELAY

  IF PPPMODE set to 2 or 4:
  PPPMYIP
  PPPPEERIP
  PPPSERVPW
  PPPSERVUN
2.3 Display IP addresses #DISPLAYIP

2.3.1 Description
This command allows the attached host to view the IP addresses that have been attributed during the IPCP phase of the PPP negotiation. Both local and remote PPP peer IP addresses are displayed. This command should be issued only once the PPP OK message has been received from the TCP/IP stack.

2.3.2 Syntax
Command syntax: AT#DISPLAYIP
Response syntax:
MY IP: xxx.xxx.xxx.xxx
PEER IP: xxx.xxx.xxx.xxx
OK

Command (GSM mode) | Possible responses
--- | ---
AT#DISPLAYIP | MY IP: 1.2.3.4
Note: Request for local and remote IP addresses
PEER IP: 1.0.3.5
OK
Note: PPPMYIP (IP address attributed to the TCP/IP stack) and PPPPEERIP (IP address attributed to the PPP peer) parameters values

Command (GPRS mode) | Possible responses
--- | ---
AT#DISPLAYIP | MY IP: 1.2.3.4
Gateway IP: 1.0.3.5
OK
Note: PPPMYIP (IP address attributed to the TCP/IP stack) and PPPPEERIP (IP address attributed to the PPP peer) parameters values

AT#DISPLAYIP
Note: Request for local and remote IP addresses
#CME ERROR: 35867
Note: no IP addresses have been attributed: no active connection or PPP/IPCP negotiation not yet completed

AT#DISPLAYIP
Note: Request for local and remote IP addresses
#CME ERROR: 35867
Note: no IP addresses have been attributed: no active connection or PPP/IPCP negotiation not yet completed

2.3.3 List of parameters
- Read parameters
  - PPPMYIP
  - PPPPEERIP
2.4 Display PPP parameters #VPPP

2.4.1 Description
This command directs the TCP/IP stack to display all the AT# parameters related to the PPP layer configuration.

2.4.2 Syntax
Command syntax: AT#VPPP

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VPPP</td>
<td>#ISPUN: &quot;myispun&quot;</td>
</tr>
<tr>
<td></td>
<td>#ISPPW: &quot;myisppwd&quot;</td>
</tr>
<tr>
<td></td>
<td>#PPPMODE: 1</td>
</tr>
<tr>
<td></td>
<td>#PPPMYIP: &quot;0.0.0.0&quot;</td>
</tr>
<tr>
<td></td>
<td>#PPPEERIP: &quot;0.0.0.0&quot;</td>
</tr>
<tr>
<td></td>
<td>#PPPSERVUN: &quot;myname&quot;</td>
</tr>
<tr>
<td></td>
<td>#PPPSERVPW: &quot;mypasswd&quot;</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>

2.4.3 List of parameters
- Read parameters
  ISPPW
  ISPUN
  PPPMODE
  PPPMYIP
  PPPEERIP
  PPPSERVUN
  PPPSERVPW

2.5 Display GPRS parameters #VGPRS

2.5.1 Description
This command directs the TCP/IP stack to display all the AT# parameters related to the GPRS configuration.

2.5.2 Syntax
Command syntax: AT#VGPRS

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VGPRS</td>
<td>#GPRSCID: 1</td>
</tr>
<tr>
<td></td>
<td>#APNPW: &quot;acces&quot;</td>
</tr>
<tr>
<td></td>
<td>#APNSERV: &quot;a2myoperator.com&quot;</td>
</tr>
<tr>
<td></td>
<td>#APNUN: &quot;a2b&quot;</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>
2.5.3 List of parameters

- Read parameters
  APNPW
  APNSERV
  APNUN
  GPRSCID

2.6 Display physical parameters #VPHY

2.6.1 Description
This command directs the TCP/IP stack to display all the AT# parameters related to the physical layer configuration.

2.6.2 Syntax

Command syntax: AT#VPHY

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VPHY</td>
<td>#ANSWERMODE: 0</td>
</tr>
<tr>
<td></td>
<td>#CALLBACKTIMER: 2</td>
</tr>
<tr>
<td></td>
<td>#CALLSCREENNUM: &quot;0&quot;</td>
</tr>
<tr>
<td></td>
<td>#DIALN1: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>#DIALN2: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>#DIALSELECT: 1</td>
</tr>
<tr>
<td></td>
<td>#GPRSMODE: 1</td>
</tr>
<tr>
<td></td>
<td>#PHYTIMEOUT: 15</td>
</tr>
<tr>
<td></td>
<td>#REDIALCOUNT: 5</td>
</tr>
<tr>
<td></td>
<td>#REDIALDELAY: 5</td>
</tr>
<tr>
<td></td>
<td>#RINGCOUNT: 0</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>

2.6.3 List of parameters

- Read parameters
  ANSWERMODE
  CALLBACKTIMER
  CALLSCREENNUM
  DIALN1
  DIALN2
  DIALSELECT
  GPRS MODE
  PHYTIMEOUT
  REDIALCOUNT
  REDIALDELAY
  RINGCOUNT
3 SMTP/POP3 e-mail Services

3.1 Parameters definition

3.1.1 SENDERNAME

- **Definition**
  The sender’s literal name (different from the SENDERADDR parameter, which is the sender’s e-mail address). This parameter will appear in the header of the e-mail sent by the TCP/IP stack software, in the field: 'From: '.

- **Setting / getting**
  Set value : AT# SENDERNAME =<Value>
  Get value : AT# SENDERNAME? or AT#VSMTP, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 120 characters. The address must be provided in literal format (for instance “machine 245”).

- **Default value**
  There is no default value for this parameter.

3.1.2 SENDERADDR

- **Definition**
  To send e-mails, the TCP/IP stack software must know the e-mail address of the sender. The “sender” is the hardware platform itself or the optional attached equipment. This e-mail address will appear in the header of the e-mail sent by the TCP/IP stack software, in the field 'From: '.

- **Setting / getting**
  Set value : AT# SENDERADDR =<Value>
  Get value : AT# SENDERADDR? or AT#VSMTP, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 120 characters. The address must be provided in literal format (for instance dev12345678@web.zyx).

- **Default value**
  There is no default value for this parameter
3.1.3 CCREC1 / CCREC2 / CCREC3

- **Definition**
  The software can send e-mail messages to an additional recipient as a "carbon copy". This parameter contains the e-mail address of the additional recipient.
  This e-mail address will appear in the header of the e-mail sent by the TCP/IP stack software in the field 'Cc:'.
  For a given value n, the “CCRECn” parameter is directly associated with the “RECn” parameter.

- **Setting / getting**
  Set value : AT#CCRECi=<Value> (replace i by 1, 2 or 3)
  Get value : AT#CCRECi? (replace i by 1, 2 or 3) or AT#VMAILi, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 120 characters. The address must be provided in literal format (for instance dev12345678@web.xyz).

- **Default value**
  There is no default value for this parameter.

3.1.4 DOMAIN

- **Definition**
  When sending an e-mail message, the TCP/IP stack software must provide the SMTP server with the domain name of the sender. In some cases, this domain name may be different from the domain name included in the sender's e-mail address.

- **Setting / getting**
  Set value : AT#DOMAIN=<Value>
  Get value : AT#DOMAIN? or AT#VSMTP, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 120 characters.

- **Default value**
  There is no default value for this parameter

3.1.5 REC1, REC1ADD / REC2, REC2ADD / REC3, REC3ADD

- **Definition**
  To send e-mail messages, the TCP/IP stack software must know the e-mail address of at least one recipient. Each e-mail address will appear in the header of the e-mail sent by the TCP/IP stack software, in the field 'To:'.
  The RECi parameter can hold a maximum of 10 e-mail addresses, each e-mail address being at most 120 characters long.

- **Setting one e-mail address / resetting the parameter / getting**
  Set value / reset the parameter: AT#RECi="Value" (replace i by 1, 2 or 3)
  Get value : AT#RECi? (replace i by 1, 2 or 3) or AT#VMAILi, AT#VALL

- **Legal values to RECi (i = 1, 2 or 3)**
  Alphanumeric ASCII text string up to 120 characters. The address must be provided in literal format (for instance dev12345678@web.xyz).

- **Setting one to ten e-mail addresses to the RECi parameter / resetting the parameter**
  To set one to ten e-mail addresses to the RECi parameter, enter the AT#RECIADD<CR> overwriting command.
  Each e-mail address has to be an alphanumeric ASCII text string, in literal format (for instance dev12345678@web.xyz). To add another e-mail...
address, enter the <CRLF> pair. To end the setting, enter the following character: 1A (in ASCII code), generated in a keyboard by CTRL+Z escape sequence.

NOTE1: This command overwrites all previously set e-mail addresses of the RECi parameter.
NOTE2: If more than 10 addresses are entered, the 11th and subsequent addresses until the end character will be ignored.

Example:

```
AT#REC1ADD<CR>
Email1@domain.fr<CRLF>
Email2@domain.com<CRLF>
<CTRL+Z>
```

- **Default value**: There is no default value for this parameter.

### 3.1.6 SUBJ1 / SUBJ2 / SUBJ3

- **Definition**: These parameters contain pre-defined subjects that will be used by the TCP/IP stack to compose the e-mail header.

- **Setting / Getting**
  - Set value: AT#SUBJi=<Value> (replace i by 1, 2 or 3)
  - Get value: AT#SUBJi? (replace i by 1, 2 or 3) or AT#VMAILi, AT#VALL

- **Legal values**: Alphanumeric ASCII text string up to 120 characters.

- **Default value**: There is no default value for this parameter.

### 3.1.7 BODY1 / BODY2 / BODY3

- **Definition**: These parameters store pre-defined message bodies. They allow the host application to send pre-defined e-mail combinations.

- **Setting / Getting**
  - Set value: AT#BODYi=<Value> (replace i by 1, 2 or 3)
  - Get value: AT#BODYi? (replace i by 1, 2 or 3)

- **Legal values**: The body content has to be entered after the AT#BODY1<CR> command. It has to be an alphanumeric ASCII text string up to 120 characters followed by the following character: 1A (in ASCII code), generated in a keyboard by CTRL+Z escape sequence.

Example:

```
AT#BODY1<CR>
Text string
<CTRL+Z>
```

- **Default value**: There is no default value for this parameter.
3.1.8 POP3HEADERMODE

- **Definition**
  When receiving an e-mail message, the TCP/IP stack can be configured to send or not the POP3 header through the serial port. The POP3 header contains the From, Cc and Subject fields.

- **Setting / getting**
  Set value: AT#POP3HEADERMODE=<Value>
  Get value: AT#POP3HEADERMODE? or AT#VPOP3, AT#VALL

- **Legal values**
  - 0: the e-mail header will not be sent over the serial port while retrieving
  - 1: the e-mail header will be sent over the serial port while retrieving

- **Default value**
  1

3.1.9 POP3PORT

- **Definition**
  To reach the POP3 server, the TCP/IP stack software must know the port of the POP3 server used for the e-mail retrieving.

- **Setting / getting**
  Set value: AT#POP3PORT=<Value>
  Get value: AT#POP3PORT? or AT#VPOP3, AT#VALL

- **Legal values**
  5 digits (each digit between 0 and 9 inclusive).
  Note that numbers above 65,535 are illegal as the port identification fields are 16 bits long in the TCP header.

- **Default value**
  110

- **Note**
  This parameter should be changed only upon request of your network administrator. It applies for network infrastructure including Firewalls, Proxy or specific TCP port translation.

3.1.10 POP3PW

- **Definition**
  Password for POP3 account. To retrieve e-mail messages sent to a specified e-mail address, the TCP/IP stack software must know the POP3 password that has been set for that e-mail account.

- **Setting / getting**
  Set value: AT#POP3PW=<Value>
  Get value: AT#POP3PW? or AT#VPOP3, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 64 characters.

- **Default value**
  There is no default value for this parameter

3.1.11 POP3SERV

- **Definition**
  To retrieve e-mail messages, the TCP/IP stack software must know the address of the POP3 server that is to be used. The POP3 server must be the
one where the specified e-mail account is hosted (which is not necessarily
maintained by the local ISP).

- **Setting / getting**
  - Set value: `AT#POP3SERV=<Value>`
  - Get value: `AT#POP3SERV?` or `AT#VPOP3, AT#VALL`

- **Legal values**
  - 32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx) or
  - alphanumeric ASCII text string up to 120 characters if DNS is
    available.

- **Default value**
  - There is no default value for this parameter

### 3.1.12 POP3UN

- **Definition**
  - User name for POP3 account. To retrieve e-mail messages sent to a
    specified e-mail address, the TCP/IP stack software must know the POP3
    user name that has been set for that e-mail account.

- **Setting / getting**
  - Set value: `AT#POP3UN=<Value>`
  - Get value: `AT#POP3UN?` or `AT#VPOP3, AT#VALL`

- **Legal values**
  - Alphanumeric ASCII text string up to 64 characters.

- **Default value**
  - There is no default value for this parameter

### 3.1.13 SMTPPORT

- **Definition**
  - To reach the SMTP server, the TCP/IP stack software must know the port of
    the SMTP server used for the e-mail sending.

- **Setting / getting**
  - Set value: `AT#SMTPPORT=<Value>`
  - Get value: `AT#SMTPPORT?` or `AT#VSMTP, AT#VALL`

- **Legal values**
  - From 1 to 5 digits (each digit between 0 and 9 inclusive). Note that
    numbers above 65,535 are illegal as the port identification fields are 16 bits
    long in the TCP header.

- **Default value**
  - 25

- **Note**
  - This parameter should be changed only upon request of your network
    administrator. It applies for network infrastructure including firewalls, proxy
    or specific TCP port translation.
3.1.14 SMTPPW

- **Definition**
  SMTP password: To send e-mail messages, some SMTP servers use an authentication process. In these cases, the TCP/IP stack software will provide the SMTP password (associated to the SMTP user name) for the e-mail sending process. If this parameter is an empty string, the authentication mode is inactive. If both this parameter and the SMTPUN parameter are not empty, the authentication mode is active.

  **Note**: the TCP/IP stack only supports the LOGIN authentication mechanism.

- **Setting / getting**
  - Set value: AT#SMTPPW=<Value>
  - Get value: AT#SMTPPW? or AT#VSMTP, AT#VALL

- **Legal values**
  - Alphanumeric ASCII text string up to 64 characters.

- **Default value**
  - There is no default value for this parameter

3.1.15 SMTPSERV

- **Definition**
  To send e-mail messages the TCP/IP stack software must know the address of the SMTP server that is to be used. In most cases, the local ISP maintains the SMTP server.

- **Setting / getting**
  - Set value: AT#SMTPSERV=<Value>
  - Get value: AT#SMTPSERV? or AT#VSMTP, AT#VALL

- **Legal values**
  - 32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx) or
  - alphanumeric ASCII text string up to 120 characters if DNS is available.

- **Default value**
  - There is no default value for this parameter

3.1.16 SMTPUN

- **Definition**
  SMTP User Name:
  To send e-mail messages, some SMTP servers use an authentication process. In these cases, the TCP/IP stack software will provide the SMTP user name (associated with a SMTP password) for the e-mail sending process. If this parameter is an empty string, the authentication mode is inactive. If both this parameter and the SMTPPW parameter are not empty, the authentication mode is active.

  **Note**: the TCP/IP stack only supports the LOGIN authentication mechanism.

- **Setting / getting**
  - Set value: AT#SMTPUN=<Value>
  - Get value: AT#SMTPUN? or AT#VSMTP, AT#VALL

- **Legal values**
  - Alphanumeric ASCII text string up to 64 characters.

- **Default value**
  - There is no default value for this parameter
3.1.17 DNSERV1

- **Definition**
  In order to translate the server names from literal format into IP addresses, the TCP/IP stack software implements the Domain Name System (DNS) protocol. The DNS Server IP address must be specified to the TCP/IP stack software.

- **Setting / getting**
  Set value: AT#DNSSERV1=<Value>
  Get value: AT#DNSSERV1? or AT#VDNS, AT#VALL

- **Legal values**
  32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx)

- **Default value**
  0.0.0.0

3.1.18 DNSERV2

- **Definition**
  In order to translate the server names from literal format into IP addresses, the TCP/IP stack software implements the Domain Name System (DNS) protocol. The DNS Server IP address has to be specified to the TCP/IP stack software. This secondary DNS server is used in case of the primary DNS server does not respond to a request.

- **Setting / getting**
  Set value: AT#DNSSERV2=<Value>
  Get value: AT#DNSSERV2? or AT#VDNS, AT#VALL

- **Legal values**
  32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx)

- **Default value**
  0.0.0.0
### 3.2 Retrieve host mail #GETMAIL

#### 3.2.1 Description

This command allows the attached host to direct the TCP/IP stack to retrieve the first mail present in the POP3 server list. Once an IP link is established, the attached host can retrieve an e-mail message at any time (except when the TCP/IP stack software is already in a process using TCP resources). This command is similar to a "check e-mail box" feature issued by a standard messaging client on a PC.

#### 3.2.2 Syntax

**Command syntax**: AT#GETMAIL

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#GETMAIL</td>
<td>Ok_Info_Mail&lt;br&gt;Note: Retrieve mail</td>
</tr>
<tr>
<td></td>
<td>&lt;mail content&gt;</td>
</tr>
<tr>
<td></td>
<td>Note: This message is issued when one e-mail message is located in the specified POP3 mailbox. Depending on the POP3HEADERMODE parameter, the TCP/IP stack sends the e-mail header over the serial port to the attached host. The (CR)(LF)(.) (CR)(LF) sequence finally indicates the end of the e-mail body.</td>
</tr>
<tr>
<td>AT#GETMAIL</td>
<td>Ok_Info_NoMail&lt;br&gt;Note: There is no e-mail to retrieve in the POP3 mailbox</td>
</tr>
<tr>
<td>AT#GETMAIL</td>
<td>#CME ERROR: 38027&lt;br&gt;Note: The address of the POP3 server has not been resolved by the secondary DNS server. TCP/IP stack is not able to reach the primary and secondary DNS servers or a wrong POP3 server address has been filled in.</td>
</tr>
<tr>
<td>AT#GETMAIL</td>
<td>#CME ERROR: &lt;value&gt;&lt;br&gt;Note: An error has occurred during the communication with the remote POP3 server. It may also happen during the data transfer after the MAIL message. In this case it is preceded by a (CR)(LF)(.) (CR)(LF) sequence. This error can be due to one of the following reason: • the DNS servers are not able to resolve the POP3 server address • the POP3 server is temporarily out of service • the authentication (POP3UN, POP3PW) is not valid&lt;br&gt;Please refer to paragraph 9.2</td>
</tr>
</tbody>
</table>
3.2.3 List of parameters

- Read parameters
  POP3HEADERMODE
  POP3PORT
  POP3UN
  POP3PW
  POP3SERV

3.3 Send mail #SENDMAIL1 / #SENDMAIL2 / #SENDMAIL3

3.3.1 Description

This command sends one of the 3 pre-defined e-mail combinations. Once an IP link is established, the attached host can direct the TCP/IP stack to send an e-mail message at any time (except when the TCP/IP stack software is already in a process using TCP resources). The header of this e-mail is built using the REC1/2/3, CCREC1/2/3 and SUBJ1/2/3 parameters while the body is filled in the BODY1/2/3 parameter. This command is similar to a "send e-mail" operation issued by a standard messaging client on a PC.

Note: #SENDMAILi is used for #SENDMAIL1 or #SENDMAIL2 or #SENDMAIL3.

3.3.2 Syntax

Command syntax: AT#SENDMAILi

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#SENDMAIL1</td>
<td>OK</td>
</tr>
<tr>
<td>Note: Send predefined mail #1</td>
<td>Note: Mail 1 has been successfully sent</td>
</tr>
<tr>
<td>AT#SENDMAIL2</td>
<td>OK</td>
</tr>
<tr>
<td>Note: Send predefined mail #2</td>
<td>Note: Mail 2 has been successfully sent</td>
</tr>
<tr>
<td>AT#SENDMAIL3</td>
<td>OK</td>
</tr>
<tr>
<td>Note: Send predefined mail #3</td>
<td>Note: Mail 3 has been successfully sent</td>
</tr>
<tr>
<td>AT#SENDMAIL2</td>
<td>#CME ERROR: 38027</td>
</tr>
<tr>
<td></td>
<td>Note: The address of the SMTP server has not been</td>
</tr>
<tr>
<td></td>
<td>resolved by the secondary DNS server. TCP/IP stack is</td>
</tr>
<tr>
<td></td>
<td>not able to reach the primary and secondary DNS servers</td>
</tr>
<tr>
<td></td>
<td>or a wrong SMTP server address has been filled in.</td>
</tr>
</tbody>
</table>
3.3.3 List of parameters

- Read parameters
  - REC1 or REC2 or REC3
  - CCREC1 or CCREC2 or CCREC3
  - SUBJ1 or SUBJ2 or SUBJ3
  - BODY1 or BODY2 or BODY3
  - SENDERADDR
  - SENDERNAME
  - DOMAIN
  - SMTPPORT
  - SMTPSERV
  - SMTPPW
  - SMTPUN

3.4 Send host mail #PUTMAIL

3.4.1 Description

This command allows the attached host to send an e-mail message containing body text passed to the TCP/IP stack over the serial port. Once an IP link is established, the attached host can send an e-mail message at any time (except when the TCP/IP stack software is already in a process using TCP resources). The header of this e-mail is built using the REC1, CCREC1 and SUBJ1 parameters. This command is similar to a "send e-mail" operation issued by a standard messaging client on a PC.
### 3.4.2 Syntax

**Command syntax**: AT#PUTMAIL

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#PUTMAIL</td>
<td><strong>Ok_Info_WaitingForData</strong>&lt;br&gt;Note: You have to configure only receiver address1, copy address1, and subject1 before or during the session, but the content (body) of the e-mails typed when the TCP/IP session is established. Content is not echoed.</td>
</tr>
<tr>
<td></td>
<td><strong>#CME ERROR: 38027</strong>&lt;br&gt;Note: The address of the SMTP server has not been resolved by the secondary DNS server. TCP/IP stack is not able to reach the primary and secondary DNS servers or a wrong SMTP server address has been filled in.</td>
</tr>
<tr>
<td>&lt;content&gt;</td>
<td><strong>OK</strong>&lt;br&gt;Note: Content is not written when typing.</td>
</tr>
<tr>
<td>&lt;CR&gt;&lt;LF&gt;.&lt;CR&gt;&lt;LF&gt;</td>
<td><strong>OK</strong>&lt;br&gt;Note: The mail has been successfully sent</td>
</tr>
<tr>
<td>AT#PUTMAIL</td>
<td><strong>#CME ERROR: &lt;value&gt;</strong>&lt;br&gt;Note: An error has occurred during the communication with the remote SMTP server. It may also happen during the data transfer (after the OK message). This error can be due to one of the following reason:</td>
</tr>
<tr>
<td></td>
<td>- the DNS servers are not able to resolve the SMTP server address</td>
</tr>
<tr>
<td></td>
<td>- the SMTP server is temporarily out of service</td>
</tr>
<tr>
<td></td>
<td>- the authentication (SMTPUN, SMTPPW) is not valid</td>
</tr>
<tr>
<td></td>
<td>- an e-mail address specified in REC1 or CCREC1 is not valid</td>
</tr>
<tr>
<td></td>
<td>- there has been an inactivity period of 50 seconds on the serial port</td>
</tr>
</tbody>
</table>

### 3.4.3 List of parameters

- **Read parameters**
  - REC1
  - CCREC1
  - SUBJ1
  - SENDERADDR
  - SENDERNAME
  - DOMAIN
  - SMTPPORT
  - SMTPSERV
  - SMTPPW
  - SMTPUN

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3.5 Display e-mail parameters #VMAIL1 / #VMAIL2 / #VMAIL3

3.5.1 Description
This command directs the TCP/IP stack to display all the AT# parameters related to the e-mail combinations configuration.
Note: The BODY1/BODY2/BODY3 parameter values are not displayed. Their values can be displayed using the AT#BODY1? / AT#BODY2? / AT#BODY3? commands.
Note : #VMAILi is used for #VMAIL1 or #VMAIL2 or #VMAIL3.

3.5.2 Syntax
Command syntax : AT#VMAILi

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VMAIL1</td>
<td>REC1=</td>
</tr>
<tr>
<td></td>
<td>CCREC1=</td>
</tr>
<tr>
<td></td>
<td>SUBJ1=</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>

Note : View predefined (nb 1) mail header elements.

3.5.3 List of parameters
- Read parameters
  RECi (REC1 or REC2 or REC3)
  CCRECi (CCREC1 or CCREC2 or CCREC3)
  SUBJi (SUBJ1 or SUBJ2 or SUBJ3)

3.6 Display POP3 parameters #VPOP3

3.6.1 Description
This command directs the TCP/IP stack to display all the AT# parameters related to the e-mail retriever configuration.

3.6.2 Syntax
Command syntax : AT#VPOP3

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VPOP3</td>
<td>#POP3HEADERMODE: 1</td>
</tr>
<tr>
<td></td>
<td>#POP3PORT: 110</td>
</tr>
<tr>
<td></td>
<td>#POP3PW: <em>mypop3passwd</em></td>
</tr>
<tr>
<td></td>
<td>#POP3SERV: <em>pop3server</em></td>
</tr>
<tr>
<td></td>
<td>#POP3UN: <em>mypop3un</em></td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>

Note : View POP3 parameters
3.6.3 List of parameters

- Read parameters
  POP3HEADERMODE
  POP3PORT
  POP3PW
  POP3SERV
  POP3UN

3.7 Display SMTP parameters #VSMTP

3.7.1 Description

This command directs the TCP/IP stack to display all the AT# parameters related to the e-mail sender configuration.

3.7.2 Syntax

Command syntax: AT#VSMTP

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
</table>
| AT#VSMTP           | #DOMAIN: "a2myoper.com"
|                    | #SENDERADDR: "toto@myoper.com"
|                    | #SENDERNAME: "toto"
|                    | #SMTPPORT: 25
|                    | #SMTPPW: "mysmtppw"
|                    | #SMTPSERV: "smtp.a2myoper.com"
|                    | #SMTPUN: "mysmtpun"
|                    | OK                                                                                 |

Note: Comment on the aim of this syntax

3.7.3 List of parameters

- Read parameters
  DOMAIN
  SENDERADDR
  SENDERNAME
  SMTPPORT
  SMTPPW
  SMTPSERV
  SMTPUN
3.8 Display DNS parameters #VDNS

3.8.1 Description
This command directs the TCP/IP stack to display all the AT# parameters related to the DNS servers configuration.

3.8.2 Syntax
Command syntax : AT#VDNS

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VDNS</td>
<td>#DNSSERV1: &quot;0.0.0.0&quot;</td>
</tr>
<tr>
<td></td>
<td>#DNSSERV2: &quot;0.0.0.0&quot;</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>

3.8.3 List of parameters
- Read parameters
  - DNSSERV1
  - DNSSERV2
4 FTP Services

4.1 Parameters definition

4.1.1 FTPPORT

- Definition
  To reach the FTP server, the TCP/IP stack software must know the control port of the FTP server used for file transfer.

- Setting / getting
  Set value: AT#FTPPORT=<Value>
  Get value: AT#FTPPORT? or AT#VFTP, AT#VALL

- Legal values
  From 1 to 5 digits (each digit between 0 and 9 inclusive). Note that numbers above 65,535 are illegal as the port identification fields are 16 bits long in the TCP header.

- Default value
  21

- Note
  This parameter should be changed only upon request of your network administrator. It applies for network infrastructure including Firewalls, Proxy or specific TCP port translation.

4.1.2 FTPTYPE

- Definition
  Before transferring files from a specified FTP server, the TCP/IP stack software must specify the type of data to be transferred within the FTP session.

- Setting / getting
  Set value: AT#FTPTYPE=<Value>
  Get value: AT#FTPTYPE? or AT#VFTP, AT#VALL

- Legal values
  - A: for FTP ASCII sessions
  - I: for FTP Binary sessions (upper case ‘i’ char)

- Default value
  I

- Note
  When this value is set to A, all the data sent by the TCP/IP stack to the FTP server is made of 7 bits characters (NVT-ASCII: the MSB is set to 0). As a consequence binary data containing 8 bits characters will be corrupted during the transfer if the FTPTYPE is set to A.
4.1.3 FTPSERV

- **Definition**
  FTP server address. To connect to an FTP server to download files, the TCP/IP stack software must know the address of the FTP server that is to be used.

- **Setting / getting**
  Set value: AT#FTPSERV=<Value>
  Get value: AT#FTPSERV? or AT#VFTP, AT#VALL

- **Legal values**
  - 32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx)
  - Alphanumeric ASCII text string up to 120 characters if DNS is available

- **Default value**
  There is no default value for this parameter

4.1.4 FTPUN

- **Definition**
  Before transferring files from a specified FTP server, the TCP/IP stack software must open an FTP session using a valid FTP user name

- **Setting / getting**
  Set value: AT#FTPUN=<Value>
  Get value: AT#FTPUN? or AT#VFTP, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 64 characters.

- **Default value**
  There is no default value for this parameter

4.1.5 FTPPW

- **Definition**
  Before transferring files from a specified FTP server, the TCP/IP stack software must open an FTP session using a valid FTP password.

- **Setting / getting**
  Set value: AT#FTPPW=<Value>
  Get value: AT#FTPPW? or AT#VFTP, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 64 characters.

- **Default value**
  There is no default value for this parameter

4.1.6 FTPGETFILENAME

- **Definition**
  In order to download a file from the FTP server, the TCP/IP stack software must know the name of the relevant file.

- **Setting / getting**
  Set value: AT#FTPGETFILENAME=<Value>
  Get value: AT#FTPGETFILENAME? or AT#VFTP, AT#VALL

- **Legal values**
  Alphanumeric ASCII text string up to 120 characters.

- **Default value**
  There is no default value for this parameter
4.1.7 FTPGETPATH

- **Definition**
  In order for the TCP/IP stack software to get a file from the FTP server, the TCP/IP stack software must know the path of the relevant file. For example, it could be: /list

- **Setting / getting**
  - Set value: AT#FTPGETPATH=<Value>
  - Get value: AT#FTPGETPATH? or AT#VFTP, AT#VALL

- **Legal values**
  Alpha-numeric ASCII text string up to 120 characters.

- **Default value**
  There is no default value for this parameter

- **Note**
  Depending on the FTP server, the value can be used for getting a file from the root directory of the FTP server

4.1.8 FTPPUTFILENAME

- **Definition**
  In order for the TCP/IP stack software to upload a file to the FTP server, the TCP/IP stack software must know the name of the relevant file.

- **Setting / getting**
  - Set value: AT#FTPPUTFILENAME=<Value>
  - Get value: AT#FTPPUTFILENAME? or AT#VFTP, AT#VALL

- **Legal values**
  Alpha-numeric ASCII text string up to 120 characters.

- **Default value**
  There is no default value for this parameter

4.1.9 FTPPUTPATH

- **Definition**
  In order for the TCP/IP stack software to upload a file to the FTP server, the TCP/IP stack software must know the path of the relevant file. For example, it could be: /list

- **Setting / getting**
  - Set value: AT#FTPPUTPATH=<Value>
  - Get value: AT#FTPPUTPATH? or AT#VFTP, AT#VALL

- **Legal values**
  Alpha-numeric ASCII text string up to 120 characters

- **Default value**
  There is no default value for this parameter

- **Note**
  Depending on the FTP server, the value can be used for getting a file from the root directory of the FTP server
4.2 Get data from server #FTPGET

4.2.1 Description
This command sent by the attached host directs the TCP/IP stack to connect to the specified FTP server and to retrieve the specified file from this server. Once the operation completed, the TCP/IP stack closes the FTP connection. Once an IP link established, the attached host can retrieve a file from a FTP server at any time (except when the TCP/IP stack software is already in a process using TCP resources). This command is similar to a GET operation (with an automatic connect/disconnect) issued by a standard FTP client on a PC. The TCP/IP stack handles the global FTP get process by itself.

**Note**: Each <ETX> character present in the payload data of the FTP flow will be coded by the TCP/IP stack on the serial port as <DLE><ETX>. Each <DLE> character will be coded as <DLE><DLE>. The attached host must then decode the FTP flow to remove these escape characters.

4.2.2 Syntax
Command syntax : AT#FTPGET

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
</table>
| AT#FTPGET     | Ok_Info_DataBegin  
**Note**: The server is ready to send data to the TCP/IP stack. For the attached host, it notifies the switch from command to data mode.  
DATA  
**Note**: The data transmitted from the FTP server to the TCP/IP stack is sent over the serial port.  
<ETX>  
**Note**: Once the file transfer finished, the TCP/IP stack sends an ETX character over the serial port to notify the attached host the end of transfer: switch from data to command mode  
OK  
**Note**: The FTP process was successfully completed. |
| AT#FTPGET     | #CME ERROR: 38027  
**Note**: The address of the FTP server has not been resolved by the secondary DNS server. The TCP/IP stack is not able to reach the primary and secondary DNS servers or a wrong FTP server address has been filled in. |
| AT#FTPGET     | #CME ERROR: <value>  
**Note**: The connection to the FTP server failed (see paragraph 9.2). If this error occurs once the data transfer started, it is preceded by an ETX character |
### 4.2.3 List of parameters

- Read parameters
  - FTPGETFILENAME
  - FTPGETPATH
  - FTPPORT
  - FTPSERV
  - FTPTYPE
  - FTPPW
  - FTPUN

### 4.3 Put data to server #FTPPUT

#### 4.3.1 Description

This command sent by the attached host directs the TCP/IP stack to connect to the specified FTP server and to upload the data received on the serial port to the specified file on this server. Once the operation completed, the TCP/IP stack closes the FTP connection.

Once an IP link is established, the attached host can send a file to a FTP server at any time (except when the TCP/IP stack software is already in a process using TCP resources).

This command is similar to a PUT operation (with an automatic connect/disconnect) issued by a standard FTP client on a PC. The TCP/IP stack handles the global FTP put process by itself.

**Note:** The TCP/IP stack will only interpret an `<ETX>` character as the end of the file to be transferred if it's not preceded by a `<DLE>` character. As a consequence the attached host must send `<ETX>` characters preceded by `<DLE>` characters and it must also code `<DLE>` characters in `<DLE><DLE>`.

#### 4.3.2 Syntax

**Command syntax:** AT#FTPPUT

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#FTPPUT</td>
<td><strong>Ok, WaitingForData</strong>&lt;br&gt;Note: TCP/IP stack is ready to send data from the serial port to the remote FTP server. TCP/IP stack then immediately transfers all the data sent by the attached host to the remote FTP server. <em>To notify TCP/IP stack that all data has been sent, the attached host must send the <code>&lt;ETX&gt;</code> character</em>&lt;br&gt;&lt;br&gt;<code>&lt;ETX&gt;</code>&lt;br&gt;Note: Notification from the host for end of data : switch from data mode to command mode&lt;br&gt;&lt;br&gt;OK&lt;br&gt;Note: The FTP process was successfully completed</td>
</tr>
<tr>
<td><em>Note: Start data sending</em></td>
<td></td>
</tr>
</tbody>
</table>
4.3.3 List of parameters

- Read parameters
  FTPPUTFILENAME
  FTPPUTPATH
  FTPPORT
  FTPSERV
  FTPTYPE
  FTPPW
  FTPUN

4.4 Display FTP parameters #VFTP

4.4.1 Description
This command directs the TCP/IP stack to display all the AT# parameters related to the FTP client configuration.

4.4.2 Syntax
Command syntax: AT#VFTP

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
</table>
| AT#VFTP | #FTPSERV: "mytestwebsite.com"
| | #FTPPORT: 21
| | #FTPUN: "myname"
| | #FTPWP: "mypass"
| | #FTPTYPE = I
| | #FTPGETFILENAME: "" #FTPGETPATH: ""
| | #FTPPUTFILENAME: "Testseb3.txt"
| | #FTPPUTPATH: "."
| | OK |
4.4.3 List of parameters

- Read parameters
  FTPSERV
  FTPPORT
  FTPUN
  FTPPW
  FTPGETFILENAME
  FTPGETPATH
  FTPPUTFILENAME
  FTPPUTPATH
  FTPTYPE
5 TCP socket Services

5.1 Parameters definition

5.1.1 DLEMODE

- **Definition**
  When performing the socket TCP, the attached host has the choice to code or not the ETX character.

- **Setting / getting**
  Set value: AT#DLEMODE=<Value>
  Get value: AT#DLEMODE? or AT#VTCP, AT#VALL

- **Legal values**
  - 0: When DLEMODE is set to 0, no specific process is needed on [ETX] characters. It means that it is not possible for a host to request a end of connection or to receive a clear indication of end of connection from the TCP/IP stack.
  - 1: When DLEMODE is set to 1, the [ETX] character means a request or an indication of end of connection. As a consequence, [ETX] characters that belongs to the payload data must be sent by the host on the serial port preceded by a DLE character. Similarly ETX characters received by the TCP/IP stack from the Internet are sent to the host through the serial port preceded by a DLE character.

- **Default value**
  1

5.1.2 TCPPORT

- **Definition**
  To exchange data over TCP, the TCP/IP stack software must know the port of the remote peer used for the TCP session.

- **Setting / getting**
  Set value: AT#TCPPORT=<Value>
  Get value: AT#TCPPORT? or AT#VTCP, AT#VALL

- **Legal values**
  From 1 to 5 digits (each digit between 0 and 9 inclusive). Note that numbers above 65,535 are illegal as the port identification fields are 16 bits long in the TCP header.

- **Default value**
  0
5.1.3 TCPSERV

- **Definition**
  To exchange data over TCP, the TCP/IP stack software must know the address of the remote TCP server (or host) that is to be used.

- **Setting / getting**
  Set value: AT#TCPSERV=<Value>
  Get value: AT#TCPSERV? or AT#VTCP, AT#VALL

- **Legal values**
  - 32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx) or
  - alphanumeric ASCII text string up to 120 characters if DNS is integrated.

- **Default value**
  There is no default value for this parameter

5.1.4 TCPTXDELAY

- **Definition**
  This parameter determines the time delay introduced before sending a TCP frame that has not been entirely filled with user data. The time is entered in milliseconds and it should be noted that a value of '0' initiates the sending of a TCP frame as soon as possible after the reception of a single character value from the host.

- **Setting / getting**
  Set value: AT#TCPTXDELAY=<Value>
  Get value: AT#TCPTXDELAY? or AT#VTCP, AT#VALL

- **Legal values**
  Integer multiple of 20 and between 0 and 32760 inclusive.

- **Default value**
  100

5.2 Open listening mode #LTCPSSTART

5.2.1 Description

This command sent by the attached host directs the TCP/IP stack to open a listening TCP connection on the specified TCP port. Once an IP link is established, the attached host can open a listening TCP socket at any time (except when the TCP/IP stack software is already in a process using TCP resources). The TCP connection will be active upon reception of a TCP connection request sent by a remote allowed TCP peer (TCPSERV) on the appropriate TCP port (TCPPORT). Once opened, this TCP connection may be closed by the remote TCP peer or by the attached host via sending an ETX character on the serial port (depending on the DLEMODE parameter).

**Note**
- The LTCP command can be aborted before an incoming TCP request has been received by issuing an <ETX> character on the serial port.
- If the DLEMODE parameter is set to 1, the TCP/IP stack will only interpret an <ETX> character as a close request if a <DLE> character does not precede it. As a consequence the attached host must send <ETX> characters preceded by <DLE> characters and it must also code...
<DLE> characters in <DLE><DLE>. Similarly, each <ETX> character present in the payload data of the TCP frame will be coded by the TCP/IP stack on the serial port as <DLE><ETX>. Each <DLE> character will be coded as <DLE><DLE>. The attached host must then decode the TCP socket flow to remove these escape characters.
- If the DLEMODE parameter is set to 0, the TCP/IP stack will never close the TCP connection (unless an error occurs).

5.2.2 Syntax

Command syntax: AT#LTCPSTART

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#LTCPSTART</td>
<td>Ok_Info_WaitingForData</td>
</tr>
<tr>
<td></td>
<td>Note: Activate listen mode</td>
</tr>
<tr>
<td></td>
<td>This message signals that a remote allowed TCP peer has opened the TCP socket. The TCP connection is now opened. All the data from the attached host / remote TCP server is then immediately transferred by the TCP/IP stack to the remote TCP server / attached host. Depending on the DLEMODE value, the attached host may close this TCP connection by sending an ETX character. If the remote TCP server closes the connection, the TCP/IP stack issues an ETX character on the serial port.</td>
</tr>
<tr>
<td>AT#LTCPSTART</td>
<td>Ok_Info_SocketClosed</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td>Note: The TCP socket is closed</td>
</tr>
<tr>
<td>AT#LTCPSTART</td>
<td>#CME ERROR: &lt;value&gt;</td>
</tr>
<tr>
<td></td>
<td>Note: An error has occurred during the TCP connection. This connection is being closed. If this error occurs once the TCP connection opened, it is preceded by an ETX character.</td>
</tr>
</tbody>
</table>

5.2.3 List of parameters

- Read parameters
  DLEMODE
  TCPPORT
  TCPSERV
5.3 Close listening mode #LTCPSTOP

5.3.1 Description
This command directs the TCP/IP stack to close a TCP listening mode (previously launched by the AT#LTCPSTART command).

5.3.2 Syntax
Command syntax: AT#LTCPSTOP

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#LTCPSTOP</td>
<td>OK Note: Stop TCP listening</td>
</tr>
<tr>
<td></td>
<td>Note: The local listening port is closed in the TCP/IP stack</td>
</tr>
</tbody>
</table>

5.3.3 List of parameters
- Read parameters
  DLEMODE
  TCPPORT
  TCPSERV

5.4 Open TCP connection #OTCP

5.4.1 Description
This command sent by the attached host directs the TCP/IP stack to open a TCP connection to the specified TCP server. Once an IP link is established, the attached host can open a TCP connection at any time (except when the TCP/IP stack software is already in a process using TCP resources). This TCP connection may be closed by the remote TCP server or by the attached host via sending an ETX character on the serial port (depending on the DLEMODE parameter).

Notes on DLEMODE value:
Depending on the DLEMODE value, the attached host may close this TCP connection by sending an ETX character.
- If the DLEMODE parameter is set to 1, the TCP/IP stack will only interpret an <ETX> character as a close request if it's not preceded by a <DLE> character. As a consequence the attached host must send <ETX> characters preceded by <DLE> characters and it must also code <DLE> characters in <DLE><DLE>. Similarly, each <ETX> character present in the payload data of the TCP frame will be coded by the TCP/IP stack on the serial port as <DLE><ETX>. Each <DLE> character will be coded as <DLE><DLE>. The attached host must then decode the TCP socket flow to remove these escape characters.
- If the DLEMODE parameter is set to 0, the TCP/IP stack will never close the TCP connection (unless an error occurs).
If the remote TCP server closes the connection, the TCP/IP stack sends an ETX character on the serial port.
5.4.2 Syntax

Command syntax : AT#OTCP

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#OTCP</td>
<td><strong>Ok_Info_WaitingForData</strong>&lt;br&gt;Note : This message signals that the TCP socket has been opened. All the data from the attached host / remote TCP server is then immediately transferred by the TCP/IP stack to the remote TCP server / attached host. Depending on the DLEMODE value, the attached host may close this TCP connection by sending an ETX character. If the remote TCP server closes the connection, the TCP/IP stack issues an ETX character on the serial port.</td>
</tr>
<tr>
<td></td>
<td><strong>Ok_Info_SocketClosed</strong>&lt;br&gt;OK&lt;br&gt;Note: The TCP socket is closed</td>
</tr>
<tr>
<td>AT#OTCP</td>
<td><strong>#CME ERROR: 38027</strong>&lt;br&gt;Note: The address of the FTP server has not been resolved by the secondary DNS server. TCP/IP stack is not able to reach the primary and secondary DNS servers or a wrong FTP server address has been filled in.</td>
</tr>
<tr>
<td>AT#OTCP</td>
<td><strong>#CME ERROR: &lt;value&gt;</strong>&lt;br&gt;Note: An error has occurred during the TCP connection. This connection is being closed. If this error occurs once the TCP connection opened, it is preceded by an ETX character. See paragraph 9.2</td>
</tr>
</tbody>
</table>

5.4.3 List of parameters

- Read parameters
  - DLEMODE
  - TCPPORT
  - TCPSERV
5.5 Display TCP parameters #VTCP

5.5.1 Description
This command directs the TCP/IP stack to display all the AT# parameters related to the TCP socket configuration.

5.5.2 Syntax
Command syntax: AT#VTCP

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VTCP</td>
<td>#DLEMODE: 1</td>
</tr>
<tr>
<td></td>
<td>#TCPSERV: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>#TCPPORT: 0</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>

Note: View TCP parameters

5.5.3 List of parameters
- Read parameters
  - DLEMODE
  - TCPSERV
  - TCPPORT
6 UDP socket Services

6.1 Parameters definition

6.1.1 UDPPORT

- **Definition**
  - Local UDP port number if UDP session is initiated in listen mode
  - Remote UDP number if UDP session is initiated in active mode.

- **Setting / getting**
  Set value: AT#UDPPORT=<Value>
  Get value: AT#UDPPORT? or AT#VUDP, AT#VALL

- **Legal values**
  From 1 to 5 numeric digits (0 to 9).
  Notes:
  - Numbers above 65,535 are illegal as the port identification fields are 16 bits long in the UDP header.
  - Port number 0 is illegal.

- **Default value**
  0

6.1.2 UDPSERV

- **Definition**
  - IP address filter if the UDP session is initiated in listen mode. This means that the remote must have a defined UDPSERV IP address.
  - Remote IP address if the UDP session is initiated in active mode.

  Note: no IP filter is applied if parameter value is “255.255.255.255”

- **Setting / getting**
  Set value: AT#UDPSERV=<Value>
  Get value: AT#UDPSERV? or AT#VUDP, AT#VALL

- **Legal values**
  - 32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx) or alphanumeric ASCII text string up to 120 characters if DNS is integrated.

- **Default value**
  There is no default value for this parameter

6.1.3 UDPTXDELAY

- **Definition**
  This parameter determines the delay before sending an UDP datagram that has not been entirely filled with user data. The delay is expressed in milliseconds.
  The ‘0’ value initiates the sending of a UDP datagram as soon as possible after the reception of a single character value from the host.
• Setting / getting
  Set value : AT#UDPTXDELAY=<Value>
  Get value : AT#UDPTXDELAY? or AT#VUDP, AT#VALL

• Legal values
  Integer, multiple of 20 and between 0 and 32760 inclusive.

• Default value
  100

6.2 Open a UDP session in listen mode #LUDPSTART

6.2.1 Description

Once an IP link is established, and if no other TCP/IP stack resource is active, this command sent by the attached host directs the TCP/IP stack to initiate a UDP session in listen mode on the specified UDP local port UDPPORT. Depending on the UDPSERV parameter content, there are two possible combinations:

- If UDPSERV is “255.255.255.255”, the IP address filter feature is turned off. The UDP session will be effective upon reception of the first datagram, supplying the remote port number and the remote IP address of the session. The host can then transmit to the (remote port or remote IP) address. Datagrams can then only be received from this (remote port or remote IP) address.

- If UDPSERV holds a valid IP address (or existing/found alphanumeric IP address), only the remote with the UDPSERV IP address will be authorized to send datagrams to this UDP socket (i.e. the IP address filter feature is activated). The UDP session will be effective upon reception of the first datagram, supplying the remote port number of the session. The host can then transmit to the (remote port, UDPSERV) address. Datagrams can then only be received from this (remote port, UDPSERV) address.

As long as the first datagram is not received, UDPSTOP can be issued to cancel the UDP session. Once the first datagram has been received, the only way to stop the UDP session for the host is to issue an <ETX> character.

Note: The TCP/IP stack will only interpret an <ETX> character as a close request if it is not preceded by a <DLE> character. As a consequence, an <ETX> character must be sent (even in payload data) as <DLE><ETX>, and <DLE> character as <DLE><DLE>. The attached host must then decode the UDP socket flow to remove these escape characters.
6.2.2 Syntax

Command syntax: AT#LUDPSTART

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#LUDPSTART</td>
<td>Note: Activate listen mode</td>
</tr>
<tr>
<td></td>
<td>Ok_Info_WaitingForData</td>
</tr>
<tr>
<td></td>
<td>Note: This message signals that a remote allowed UDP peer has sent its first datagram to local UDP socket. The UDP connection is now effective. All</td>
</tr>
<tr>
<td></td>
<td>data from the attached host / remote UDP peer is immediately transferred by the TCP/IP stack to the remote UDP peer / attached host. The attached</td>
</tr>
<tr>
<td></td>
<td>host may close this UDP session by sending an &lt;ETX&gt; character. If an error occurs, the TCP/IP stack issues an &lt;ETX&gt; character on the serial port before</td>
</tr>
<tr>
<td></td>
<td>sending the appropriate error message.</td>
</tr>
</tbody>
</table>

AT#LUDPSTART

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#LUDPSTART</td>
<td>Ok_Info_WaitingForData</td>
</tr>
<tr>
<td></td>
<td>...</td>
</tr>
<tr>
<td></td>
<td>...</td>
</tr>
<tr>
<td></td>
<td>&lt;ETX&gt;</td>
</tr>
<tr>
<td></td>
<td>Ok_Info_SocketClosed</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td>Note: The UDP socket is closed.</td>
</tr>
</tbody>
</table>

AT#LUDPSTART

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#LUDPSTART</td>
<td>#CME ERROR: &lt;value&gt;</td>
</tr>
<tr>
<td></td>
<td>Note: An error has occurred during the UDP session creation. If this error occurs once the UDP session is effective, it is preceded by an &lt;ETX&gt;</td>
</tr>
<tr>
<td></td>
<td>character. See paragraph 9.2</td>
</tr>
</tbody>
</table>

6.2.3 List of parameters

- Read parameters
  - UDPPORT
  - UDPSERV
  - UDPTXDELAY

6.3 Close a listening mode UDP session #LUDPSTOP

6.3.1 Description

This command directs the TCP/IP stack to close a UDP listening mode session (previously launched by the AT#LUDPSTART command).

6.3.2 Syntax

Command syntax: AT#LUDPSTOP

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#LUDPSTOP</td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td>Note: Stop UDP listening</td>
</tr>
<tr>
<td></td>
<td>Note: The local listening port is closed in the TCP/IP stack</td>
</tr>
</tbody>
</table>

6.3.3 List of parameters

- Read parameters
  - UDPPORT
  - UDPSERV
  - UDPTXDELAY
6.4 Open an active UDP session #OUDP

6.4.1 Description
Once an IP link is established, and if no other TCP/IP stack resource is active, this command sent by the attached host directs the TCP/IP stack to initiate a UDP session in active mode on the specified UDP remote port UDPPORT to the specified remote IP address UDPSERV. The host can then transmit to the UDPPORT or UDPSERV address. Datagrams can only be received from this UDPPORT or UDPSERV address.

The host can stop the UDP session by issuing an <ETX> character.

Note: The TCP/IP stack will only interpret an <ETX> character as a close request if it is not preceded by a <DLE> character. As a consequence, an <ETX> character must be sent (even in payload data) as <DLE><ETX>, and <DLE> character as <DLE><DLE>. The attached host must then decode the UDP socket flow to remove these escape characters.

6.4.2 Syntax
Command syntax: AT#OUDP

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#OUDP</td>
<td>Ok_Info_WaitingForData</td>
</tr>
<tr>
<td></td>
<td>Note: Request opening of UDP socket</td>
</tr>
<tr>
<td></td>
<td>Note: This message signals that the UDP socket has been opened. All data from the</td>
</tr>
<tr>
<td></td>
<td>attached host / remote UDP peer is immediately transferred by the TCP/IP stack</td>
</tr>
<tr>
<td></td>
<td>to the remote UDP peer / attached host. The attached host may close this UDP</td>
</tr>
<tr>
<td></td>
<td>session by sending an &lt;ETX&gt; character. If an error occurs, the TCP/IP stack issues</td>
</tr>
<tr>
<td></td>
<td>an &lt;ETX&gt; character on the serial port before sending the appropriate error message.</td>
</tr>
<tr>
<td>AT#OUDP</td>
<td>Ok_Info_WaitingForData</td>
</tr>
<tr>
<td></td>
<td>...</td>
</tr>
<tr>
<td></td>
<td>...</td>
</tr>
<tr>
<td></td>
<td>&lt;ETX&gt;</td>
</tr>
<tr>
<td></td>
<td>Ok_Info_SocketClosed</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td>Note: The UDP socket is closed.</td>
</tr>
<tr>
<td>AT#OUDP</td>
<td>#CME ERROR: 38027</td>
</tr>
<tr>
<td></td>
<td>Note: The address of the remote UDP peer has not been resolved by the secondary</td>
</tr>
<tr>
<td></td>
<td>DNS server. TCP/IP stack is not able to reach the primary and secondary DNS servers</td>
</tr>
<tr>
<td></td>
<td>or a wrong remote UDP peer address has been filled in.</td>
</tr>
<tr>
<td>AT#OUDP</td>
<td>#CME ERROR: &lt;value&gt;</td>
</tr>
<tr>
<td></td>
<td>Note: An error has occurred during the UDP session creation. If this error occurs</td>
</tr>
<tr>
<td></td>
<td>once the UDP session is effective, it is preceded by an &lt;ETX&gt; character. See</td>
</tr>
<tr>
<td></td>
<td>paragraph 9.2</td>
</tr>
</tbody>
</table>
6.4.3 List of parameters

- Read parameters
  UDPPORT
  UDPSERV
  UDPTXDELAY

6.5 Display UDP parameters #VUDP

6.5.1 Description

This command directs the TCP/IP stack to display all the AT# parameters related to the UDP socket configuration.

6.5.2 Syntax

Command syntax: AT#VUDP

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VUDP</td>
<td>#UDPSERV: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>#UDPPORT: 0</td>
</tr>
<tr>
<td></td>
<td>#UDPTXDELAY: 100</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>

Note: View UDP parameters

6.5.3 List of parameters

- Read parameters
  UDPSERV
  UDPPORT
  UDPTXDELAY
7 PING Services

7.1 Parameters definition

7.1.1 PINGDELAY

- **Definition**
  Waiting delay, in seconds, before an echo request is considered as not replied to.
  It is also the delay between two echo requests (if PINGNUM > 1).

- **Setting / getting**
  Set value : AT#PINGDELAY=<Value>
  Get value : AT#PINGDELAY? or AT#VPING, AT#VALL

- **Legal values**
  From 1 to 255 inclusive.

- **Default value**
  1

7.1.2 PINGNUM

- **Definition**
  Number of PING echo requests to issue to PINGREMOTE.

- **Setting / getting**
  Set value : AT#PINGNUM=<Value>
  Get value : AT#PINGNUM? or AT#VPING, AT#VALL

- **Legal values**
  From 1 to 255 inclusive.

- **Default value**
  4

7.1.3 PINGREMOTE

- **Definition**
  IP address or alpha-num ASCII text string, up to 120 characters long if DNS is available.

- **Setting / getting**
  Set value : AT#PINGREMOTE=<Value>
  Get value : AT#PINGREMOTE? or AT#VPING, AT#VALL

- **Legal values**
  - 32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx) or
  - alphanumeric ASCII text string up to 120 characters long if DNS is integrated.

- **Default value**
  There is no default value for this parameter.
7.2 Start PING request

7.2.1 Description
Once an IP link is established, and if no other TCP/IP stack resource is active, this command sent by the attached host directs the TCP/IP stack to start PING requests.

7.2.2 Syntax
Command syntax : AT#PING

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
</table>
| AT#PING | "wavecom.com" is alive : time = 900 ms  
| | * wavecom.com * is alive : time = 900 ms  
| | * wavecom.com * is alive : time = 800 ms  
| | * wavecom.com * is alive : time = 800 ms  
| | * wavecom.com * is alive : time = 1000 ms  
| | No answer from * wavecom.com *  
| | * wavecom.com * is alive : time = 900 ms  
| | * wavecom.com * is alive : time = 800 ms  
| | * wavecom.com * is alive : time = 900 ms  
| | * wavecom.com * is alive : time = 900 ms  
| | OK  
| | Note: TCP/IP stack sends PINGNUM = 10 request |
| AT#PING | #CME ERROR: 38027  
| | Note: The address of the remote has not been resolved by the DNS servers. TCP/IP stack is not able to reach the primary and secondary DNS servers or a wrong remote address has been fill in |
| AT#PING | #CME ERROR: <value>  
| | Note: An error has occurred during the PING requests  
| | Please refer to paragraph 9.2 |

7.2.3 List of parameters
- Read parameters
- PINGDELAY
- PINGNUM
- PINGREMOTE
7.3 Display PING parameters #VPING

7.3.1 Description
This command directs the TCP/IP stack to display all the AT# parameters related to the PING configuration.

7.3.2 Syntax
Command syntax : AT#VPING

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VPING</td>
<td>#PINGDELAY: 1</td>
</tr>
<tr>
<td></td>
<td>#PINGNUM: 4</td>
</tr>
<tr>
<td></td>
<td>#PINGREMOTE: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>

*Note : View PING parameters*

7.3.3 List of parameters
- Read parameters
  - PINGDELAY
  - PINGNUM
  - PINGREMOTE
8 Miscellaneous

8.1 Display software version #VVERSION

8.1.1 Description
This command directs the TCP/IP stack to display the software version.

8.1.2 Syntax
Command syntax : AT#VVERSION
Response syntax : <Filename> – <File size> – <Date and time of generation>

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VVERSION</td>
<td>#VERSION: &quot;eDsoft-W302_V01.00 67826 Mar 18 2003 18:42:19&quot; OK</td>
</tr>
<tr>
<td>Note :</td>
<td>Request TCP/IP stack version</td>
</tr>
</tbody>
</table>

8.1.3 List of parameters
No TCP/IP parameters.

8.2 Display current status #VSTATE

8.2.1 Description
This command directs the TCP/IP stack to display the current status of the Wavecom product.

8.2.2 Syntax
Command syntax : AT#VSTATE

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VSTATE</td>
<td>#STATE: “IDLE” OK</td>
</tr>
<tr>
<td>Note :</td>
<td>Idle state</td>
</tr>
<tr>
<td>AT#VSTATE</td>
<td>#STATE: “DIALING” OK</td>
</tr>
<tr>
<td>Note :</td>
<td>Dialing the ISP. Not yet connected</td>
</tr>
<tr>
<td>AT#VSTATE</td>
<td>#STATE: “AUTHENTICATING” OK</td>
</tr>
<tr>
<td>Note :</td>
<td>Connection. Not yet PPP negotiated (PPP OK message)</td>
</tr>
<tr>
<td>AT#VSTATE</td>
<td>#STATE: “CONNECTED” OK</td>
</tr>
<tr>
<td>Note :</td>
<td>Connected to Internet. An IP address has been attributed to the TCP/IP stack</td>
</tr>
</tbody>
</table>
### 8.2.3 List of parameters

No TCP/IP parameters.

### 8.3 Display all parameters #VALL

#### 8.3.1 Description

This command directs the TCP/IP stack to display all the AT# parameters. The parameters are displayed by blocks of categories separated by a <CR><LF> sequence, all at the same time.

#### 8.3.2 Syntax

**Command syntax:** AT#VALL

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#VALL</td>
<td>eDsoft-W302_V01.00 67826 Mar 18 2003 18:42:19</td>
</tr>
<tr>
<td></td>
<td>#ANSWERMODE: 0</td>
</tr>
<tr>
<td></td>
<td>#CALLBACKTIMER: 2</td>
</tr>
<tr>
<td></td>
<td>#CALLSCREENNUM: '0'</td>
</tr>
<tr>
<td></td>
<td>#DIALN1: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>#DIALN2: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>#DIALEASELECT: 1</td>
</tr>
<tr>
<td></td>
<td>#GPRSMODE: 1</td>
</tr>
<tr>
<td></td>
<td>#PHYTIMEOUT: 15</td>
</tr>
<tr>
<td></td>
<td>#REDIALCOUNT: 5</td>
</tr>
<tr>
<td></td>
<td>#REDIALDELAY: 5</td>
</tr>
<tr>
<td></td>
<td>#RINGCOUNT: 0</td>
</tr>
<tr>
<td></td>
<td>#ISPUN: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>#ISPPW: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>#PPPMODE: 1</td>
</tr>
<tr>
<td></td>
<td>#PPPMYIP: &quot;0.0.0.0&quot;</td>
</tr>
<tr>
<td></td>
<td>#PPPEERIP: &quot;0.0.0.0&quot;</td>
</tr>
<tr>
<td></td>
<td>#PPPSERVUN: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>#PPPSERVPW: &quot;&quot;</td>
</tr>
<tr>
<td></td>
<td>#GPRSCID: 1</td>
</tr>
<tr>
<td></td>
<td>#APNPW: &quot;acces&quot;</td>
</tr>
<tr>
<td></td>
<td>#APNSERV: &quot;a2bouygtel.com&quot;</td>
</tr>
<tr>
<td></td>
<td>#APNU: &quot;a2b&quot;</td>
</tr>
<tr>
<td></td>
<td>#DNSSERV1: &quot;0.0.0.0&quot;</td>
</tr>
<tr>
<td></td>
<td>#DNSSERV2: &quot;0.0.0.0&quot;</td>
</tr>
</tbody>
</table>
### 8.3.3 List of parameters

- Read parameters
- All parameters.

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>#FTPSERV: &quot;mytestwebsite.com&quot;</td>
<td></td>
</tr>
<tr>
<td>#FTPPORT: 21</td>
<td></td>
</tr>
<tr>
<td>#FTPUN: &quot;mylogin&quot;</td>
<td></td>
</tr>
<tr>
<td>#FTPPW: &quot;mypassword&quot;</td>
<td></td>
</tr>
<tr>
<td>#FTPFTP = I</td>
<td></td>
</tr>
<tr>
<td>#FTPGETFILENAME: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#FTPGETPATH: &quot;.&quot;</td>
<td></td>
</tr>
<tr>
<td>#FTPPUTFILENAME: &quot;Testseb3.txt&quot;</td>
<td></td>
</tr>
<tr>
<td>#FTPPUTPATH: &quot;.&quot;</td>
<td></td>
</tr>
<tr>
<td>#POP3HEADERMODE: 1</td>
<td></td>
</tr>
<tr>
<td>#POP3PORT: 110</td>
<td></td>
</tr>
<tr>
<td>#POP3PW: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#POP3SERV: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#POP3UN: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#DOMAIN: &quot;a2bouygtel.com&quot;</td>
<td></td>
</tr>
<tr>
<td>#SENDERADDR: &quot;<a href="mailto:toto@bouygtel.com">toto@bouygtel.com</a>&quot;</td>
<td></td>
</tr>
<tr>
<td>#SENDERNAME: &quot;toto&quot;</td>
<td></td>
</tr>
<tr>
<td>#SMTPPORT: 25</td>
<td></td>
</tr>
<tr>
<td>#SMTPPW: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#SMTPSERV: &quot;smtp.a2bouygtel.com&quot;</td>
<td></td>
</tr>
<tr>
<td>#SMTPSERV: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#POP3HEADERMODE: 1</td>
<td></td>
</tr>
<tr>
<td>#POP3PORT: 110</td>
<td></td>
</tr>
<tr>
<td>#POP3PW: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#POP3SERV: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#POP3UN: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#BODY1: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#CCREC1: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#REC1: &quot;lesavecom.com&quot;</td>
<td></td>
</tr>
<tr>
<td>#SUBJ1: &quot;Test&quot;</td>
<td></td>
</tr>
<tr>
<td>#BODY2: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#CCREC2: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#REC2: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#SUBJ2: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#BODY3: &quot;9:1234567890abcd&quot;</td>
<td></td>
</tr>
<tr>
<td>#CCREC3: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#REC3: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#SUBJ3: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#DLEMODE: 1</td>
<td></td>
</tr>
<tr>
<td>#TCPANSER: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#TCPPTXDELAY: 100</td>
<td></td>
</tr>
<tr>
<td>#UDPPORT : 0</td>
<td></td>
</tr>
<tr>
<td>#UDPANSER : &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>#UDPTXDELAY:100</td>
<td></td>
</tr>
<tr>
<td>#PINGDELAY:1</td>
<td></td>
</tr>
<tr>
<td>#PINGNUM: 4</td>
<td></td>
</tr>
<tr>
<td>#PINGREMOTE: &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>OK</td>
<td></td>
</tr>
</tbody>
</table>
8.4 Erase flash memory parameter values #DELFFLASH

8.4.1 Description
This command erases the contents of parameter flash memory. Used prior to a ‘hard reset’ of the module, it results in the default values being written into the parameter memory.
Note: the current parameter values remain visible until the ‘hard reset’ has completed.

8.4.2 Syntax
Command syntax: AT#DELFFLASH

<table>
<thead>
<tr>
<th>Command</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#DELFFLASH</td>
<td>OK</td>
</tr>
</tbody>
</table>

*Note: Delete flash memory contents*

8.4.3 List of parameters
No TCP/IP parameters.
9 Response messages and error codes.

9.1 Response messages

<table>
<thead>
<tr>
<th>Numeric</th>
<th>Verbose</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>OK</td>
<td>Operation or command success</td>
</tr>
<tr>
<td>3</td>
<td>NO CARRIER</td>
<td>No physical layer connection</td>
</tr>
<tr>
<td>7</td>
<td>BUSY</td>
<td>Destination busy</td>
</tr>
<tr>
<td>8</td>
<td>NO ANSWER</td>
<td>No answer from destination</td>
</tr>
<tr>
<td>4</td>
<td>ERROR</td>
<td>Operation or command unsuccessful</td>
</tr>
<tr>
<td>2</td>
<td>RING</td>
<td>Incoming call indication</td>
</tr>
<tr>
<td>10</td>
<td>CONNECT 300</td>
<td>Physical layer connected at 300 baud</td>
</tr>
<tr>
<td>11</td>
<td>CONNECT 1200</td>
<td>Physical layer connected at 1200 baud</td>
</tr>
<tr>
<td>12</td>
<td>CONNECT 1200/75</td>
<td>Physical layer connected at 1200/75 baud</td>
</tr>
<tr>
<td>13</td>
<td>CONNECT 2400</td>
<td>Physical layer connected at 2400 baud</td>
</tr>
<tr>
<td>14</td>
<td>CONNECT 4800</td>
<td>Physical layer connected at 4800 baud</td>
</tr>
<tr>
<td>15</td>
<td>CONNECT 9600</td>
<td>Physical layer connected at 9600 baud</td>
</tr>
<tr>
<td>16</td>
<td>CONNECT 14400</td>
<td>Physical layer connected at 14400 baud</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Numeric</th>
<th>Verbose</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1025</td>
<td>Ok_Info_DataBegin</td>
<td>Start of data</td>
</tr>
<tr>
<td>1028</td>
<td>Ok_Info_WaitingForData</td>
<td>Send data</td>
</tr>
<tr>
<td>3074</td>
<td>Ok_Info_SocketClosed</td>
<td>Socket connection closed successfully</td>
</tr>
<tr>
<td>3072</td>
<td>Ok_Info_NoMail</td>
<td>No mail to retrieve on server</td>
</tr>
<tr>
<td>3073</td>
<td>Ok_Info_Mail</td>
<td>Mail ready to be retrieved on server</td>
</tr>
<tr>
<td>3077</td>
<td>Ok_Info_Ppp</td>
<td>PPP connection successful</td>
</tr>
<tr>
<td>3086</td>
<td>Ok_Info_GprsActivation</td>
<td>GPRS connection successful</td>
</tr>
</tbody>
</table>

9.2 Error codes

<table>
<thead>
<tr>
<th>Numeric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34817</td>
<td>Bad command : Unknown command</td>
</tr>
<tr>
<td>34819</td>
<td>Bad command : Syntax error</td>
</tr>
<tr>
<td>34824</td>
<td>Bad command : EEPROM write failed</td>
</tr>
<tr>
<td>34881</td>
<td>Bad command : Command to long</td>
</tr>
<tr>
<td>34882</td>
<td>Bad command : Bad command argument value</td>
</tr>
<tr>
<td>35840</td>
<td>Physical layer : Modem is already running</td>
</tr>
<tr>
<td>35841</td>
<td>Physical layer : GPRS session lost.</td>
</tr>
<tr>
<td>35862</td>
<td>Physical layer : Timeout, no activity on network connection</td>
</tr>
<tr>
<td>35865</td>
<td>Physical layer : Module is not attached to the network</td>
</tr>
<tr>
<td>35866</td>
<td>Physical layer : Invalid event during activation process</td>
</tr>
<tr>
<td>35867</td>
<td>Physical layer : Physical layer connection is currently not active</td>
</tr>
<tr>
<td>Numeric</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td>35868</td>
<td>Physical layer : GPRS connection aborted</td>
</tr>
<tr>
<td>35869</td>
<td>Physical layer : Invalid incoming call type</td>
</tr>
<tr>
<td>35870</td>
<td>Physical layer : Incoming call CLI not provided</td>
</tr>
<tr>
<td>35871</td>
<td>IP Connectivity library: SIM removed</td>
</tr>
<tr>
<td>36872</td>
<td>IP Connectivity library internal error: internal resource unavailable.</td>
</tr>
<tr>
<td>36929</td>
<td>IP Connectivity library : Bad parameter configuration attempt</td>
</tr>
<tr>
<td>37120</td>
<td>IP Connectivity library : PPP negotiation failed (client configuration)</td>
</tr>
<tr>
<td>37121</td>
<td>IP Connectivity library: PPP negotiation failed (server configuration)</td>
</tr>
<tr>
<td>37122</td>
<td>IP Connectivity library: Another internal application is already running</td>
</tr>
<tr>
<td>37123</td>
<td>IP Connectivity library: Service is running. Unable to set parameter</td>
</tr>
<tr>
<td>37952</td>
<td>Distant : TCP session closed (TCP Context cancelled)</td>
</tr>
<tr>
<td>37964</td>
<td>Distant : No response from server</td>
</tr>
<tr>
<td>37966</td>
<td>Distant : TCP session closed by peer (FIN received from peer)</td>
</tr>
<tr>
<td>38016</td>
<td>Distant : Open session attempt failed</td>
</tr>
<tr>
<td>38017</td>
<td>Distant : Data send attempt failed</td>
</tr>
<tr>
<td>38018</td>
<td>Distant : Close session attempt failed</td>
</tr>
<tr>
<td>38022</td>
<td>Distant : Change Directory attempt failed</td>
</tr>
<tr>
<td>38023</td>
<td>Distant : File deletion attempt failed</td>
</tr>
<tr>
<td>38024</td>
<td>Distant : Data retrieve attempt failed</td>
</tr>
<tr>
<td>38025</td>
<td>Distant : Email retrieve attempt failed</td>
</tr>
<tr>
<td>38026</td>
<td>Distant : Email header receive failed</td>
</tr>
<tr>
<td>38027</td>
<td>Distant : No answer from DNS servers or the domain name resolution could not be completed by the server.</td>
</tr>
<tr>
<td>38028</td>
<td>Distant : Sender email address rejected by server</td>
</tr>
<tr>
<td>38029</td>
<td>Distant : Recipient email address rejected by server</td>
</tr>
<tr>
<td>38030</td>
<td>Distant : CC Recipient email address rejected by server</td>
</tr>
<tr>
<td>38031</td>
<td>Distant : Email body send request rejected by server</td>
</tr>
<tr>
<td>38080</td>
<td>Distant : Username rejected by server</td>
</tr>
<tr>
<td>38081</td>
<td>Distant : Password rejected by server</td>
</tr>
<tr>
<td>38980</td>
<td>IP Connectivity library: PPP timeout (client configuration)</td>
</tr>
<tr>
<td>38981</td>
<td>IP Connectivity library: PPP timeout (server configuration)</td>
</tr>
<tr>
<td>49153</td>
<td>Internal error : Open data flow request failed</td>
</tr>
<tr>
<td>49154</td>
<td>Internal error : Close data flow request failed</td>
</tr>
<tr>
<td>49155</td>
<td>Internal error : Open GPRS session request failed</td>
</tr>
<tr>
<td>49156</td>
<td>Internal error : GPRS authentication failed</td>
</tr>
<tr>
<td>49157</td>
<td>Internal error : GPRS get IPCP information request failed</td>
</tr>
<tr>
<td>49158</td>
<td>Internal error : Open flow confirmation not received</td>
</tr>
<tr>
<td>34817</td>
<td>Bad command : Unknown command</td>
</tr>
<tr>
<td>34819</td>
<td>Bad command : Syntax error</td>
</tr>
</tbody>
</table>
A. Appendix A : Getting started with examples

A.1. Get Software Version

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT+WOPEN=1</td>
<td>OK</td>
</tr>
<tr>
<td><strong>Note:</strong> start the TCP/IP stack</td>
<td></td>
</tr>
<tr>
<td>AT#VVERSION</td>
<td>#VERSION = &quot;eDsoft-W302_V01.00 68262 Apr 09 2003 19:19:49&quot;</td>
</tr>
<tr>
<td><strong>Note:</strong> check the TCP/IP stack software version</td>
<td></td>
</tr>
</tbody>
</table>

A.2. AT# Interface

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#PPPmode=1</td>
<td>OK</td>
</tr>
<tr>
<td><strong>Note:</strong> Set a parameter value</td>
<td></td>
</tr>
<tr>
<td>AT#PPPmode?</td>
<td>#PPPMODE: 1</td>
</tr>
<tr>
<td><strong>Note:</strong> Request a parameter value</td>
<td></td>
</tr>
</tbody>
</table>

A.3. GSM Network Registration

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT+CPIN=xxxx</td>
<td>OK</td>
</tr>
<tr>
<td><strong>Note:</strong> Set a the pin code</td>
<td></td>
</tr>
<tr>
<td>AT+CREG=1</td>
<td>OK</td>
</tr>
<tr>
<td><strong>Note:</strong> Ask for registration state</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+CREG: 1</td>
</tr>
</tbody>
</table>

A.4. GSPRS Network Registration

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT+CGREG=1</td>
<td>OK</td>
</tr>
<tr>
<td><strong>Note:</strong> Ask for GPRS registration state</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+CGREG: 0</td>
</tr>
<tr>
<td>AT+CGATT=1</td>
<td>+CGREG: 2</td>
</tr>
<tr>
<td><strong>Note:</strong> GPRS attach</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+CGREG: 1</td>
</tr>
</tbody>
</table>
## A.5. Connection to the Internet

### A.5.1. Connection to the Internet Service Provider using GSM data: AT#ConnectionStart

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#GPRSMODE=0</td>
<td>OK</td>
</tr>
<tr>
<td><em>Note: Activate the GSM data mode</em></td>
<td></td>
</tr>
<tr>
<td>AT#DIALN1=&quot;0860000000&quot;</td>
<td>OK</td>
</tr>
<tr>
<td><em>Note: Set the ISP phone number</em></td>
<td></td>
</tr>
<tr>
<td>AT#ISPUN=&quot;login&quot;</td>
<td>OK</td>
</tr>
<tr>
<td><em>Note: Set the ISP login</em></td>
<td></td>
</tr>
<tr>
<td>AT#ISPPW=&quot;password&quot;</td>
<td>OK</td>
</tr>
<tr>
<td><em>Note: Set the ISP password</em></td>
<td></td>
</tr>
<tr>
<td>AT#DNSSERV1=&quot;xxx.xxx.xxx&quot;</td>
<td>OK</td>
</tr>
<tr>
<td><em>Note: Set the DNS server address (coming with the ISP subscription)</em></td>
<td></td>
</tr>
<tr>
<td>AT#ConnectionStart</td>
<td>DIALING</td>
</tr>
<tr>
<td><em>Note: Launch the ISP connection</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>08600000000</td>
</tr>
<tr>
<td></td>
<td><em>Note: The remote modem answers to the call.</em></td>
</tr>
<tr>
<td></td>
<td>CONNECT 9600</td>
</tr>
<tr>
<td></td>
<td>213.30.30.30</td>
</tr>
<tr>
<td></td>
<td><em>Note: Dynamic IP address attributed by the network</em></td>
</tr>
<tr>
<td></td>
<td>Ok_Info_Ppp</td>
</tr>
<tr>
<td></td>
<td><em>Note: The PPP link is established.</em></td>
</tr>
<tr>
<td>AT#ConnectionStop</td>
<td>OK</td>
</tr>
<tr>
<td><em>Note: When required, stop the Internet connection</em></td>
<td></td>
</tr>
</tbody>
</table>
A.5.2. Connection to the Internet Service Provider using GPRS:

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#GPRSMODE=1&lt;br&gt;Note: Activate the GPRS mode</td>
<td>OK</td>
</tr>
<tr>
<td>AT#APNSERV=”apnserver.com”&lt;br&gt;Note: Set the APN server (GPRS provider)</td>
<td>OK</td>
</tr>
<tr>
<td>AT#APNUN=”login”&lt;br&gt;Note: Set the APN login</td>
<td>OK</td>
</tr>
<tr>
<td>AT#APNPW=”password”&lt;br&gt;Note: Set the APN password</td>
<td>OK</td>
</tr>
<tr>
<td>AT#ConnectionStart&lt;br&gt;Note: Launch the GPRS connection</td>
<td>213.30.30.30&lt;br&gt;Note: Dynamic IP address attributed by the network&lt;br&gt;Ok_Info_GprsActivation&lt;br&gt;Note: The GPRS/IP link is established.</td>
</tr>
<tr>
<td>AT#ConnectionStop&lt;br&gt;Note: When required, stop the Internet connection</td>
<td>OK</td>
</tr>
</tbody>
</table>
### A.6. Sending/retrieving email

#### A.6.1. Sending an email: AT#PutMail

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#SMTPSERV=&quot;smtp.domain.com&quot; Note: SMTP server used</td>
<td>OK</td>
</tr>
<tr>
<td>AT#DOMAIN=&quot;domain.com&quot;       Note: Domain name</td>
<td>OK</td>
</tr>
<tr>
<td>AT#SENDERNAME=&quot;Test module&quot;  Note: Sender Name</td>
<td>OK</td>
</tr>
<tr>
<td>AT#SENDERADDR=&quot;<a href="mailto:module@domain.com">module@domain.com</a>&quot; Note: Sender email address</td>
<td>OK</td>
</tr>
<tr>
<td>AT#REC1=<a href="mailto:recipient@domain.com">recipient@domain.com</a>  Note: Recipient email address</td>
<td>OK</td>
</tr>
<tr>
<td>AT#CCREC1=<a href="mailto:ccrecipient@domain.com">ccrecipient@domain.com</a> Note: Carbon Copy recipient</td>
<td>OK</td>
</tr>
<tr>
<td>AT#SUBJ1=&quot;Email Subject&quot;     Note: Email Subject</td>
<td>OK</td>
</tr>
<tr>
<td>AT#Putmail                    Note: Send an email (type the email text, and then the end sequence)</td>
<td>Ok_Info_WaitingForData Note: The software is ready to receive incoming data (not echoed) At the end of data , the [CR][LF], [CR][LF] sequence ends the email. This sequence can be sent by a keyboard by : ENTER CTRL+ENTER . ENTER CTRL+ENTER</td>
</tr>
<tr>
<td>Note: end sequence sent</td>
<td>OK</td>
</tr>
</tbody>
</table>

Note: The email is successfully sent
A.6.2. Retrieving an email: AT#Getmail

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#POP3SERV=&quot;pop3.domain.com&quot;</td>
<td>OK</td>
</tr>
<tr>
<td>Note: POP3 server used</td>
<td></td>
</tr>
<tr>
<td>AT#POP3UN=&quot;<a href="mailto:module@domain.com">module@domain.com</a>&quot;</td>
<td>OK</td>
</tr>
<tr>
<td>Note: POP3 username (not always the complete email address). It is the POP3 login</td>
<td></td>
</tr>
<tr>
<td>AT#POP3PW=&quot;password&quot;</td>
<td>OK</td>
</tr>
<tr>
<td>Note: POP3 password</td>
<td></td>
</tr>
<tr>
<td>AT#Getmail</td>
<td>Ok_Info_Mail</td>
</tr>
<tr>
<td>Note: Retrieve an email</td>
<td>Note: The software switches from command mode to data mode for receiving the email content.</td>
</tr>
<tr>
<td></td>
<td>Data</td>
</tr>
<tr>
<td></td>
<td>Data</td>
</tr>
<tr>
<td></td>
<td>Note: At the end of data, the [CR][LF], [CR][LF] sequence notifies the end of the data mode</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td>Note: The email is successfully retrieved</td>
</tr>
</tbody>
</table>

A.7. FTP: Download / upload files

A.7.1. Upload a file to a FTP server: AT#FTPput

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#FTPSERV=&quot;pop3.domain.com&quot;</td>
<td>OK</td>
</tr>
<tr>
<td>Note: FTP server used</td>
<td></td>
</tr>
<tr>
<td>AT#FTPUN=&quot;ftpllogin&quot;</td>
<td>OK</td>
</tr>
<tr>
<td>Note: FTP username</td>
<td></td>
</tr>
<tr>
<td>AT#FTPPW=&quot;ftppassword&quot;</td>
<td>OK</td>
</tr>
<tr>
<td>Note: FTP password</td>
<td></td>
</tr>
<tr>
<td>AT#FTPPUTFILENAME=&quot;upload.txt&quot;</td>
<td>OK</td>
</tr>
<tr>
<td>Note: Name of the file that will be written in the FTP server</td>
<td></td>
</tr>
<tr>
<td>AT#FTPPUTPATH=&quot;.&quot;</td>
<td>OK</td>
</tr>
<tr>
<td>Note: Path in the server where the file will be written.</td>
<td></td>
</tr>
<tr>
<td>AT#FTPput</td>
<td>Ok_Info_WaitingForData</td>
</tr>
<tr>
<td>Note: FTP put</td>
<td>Note: Switch from command to data mode. The host can send the data that will compose the file. (Data not echoed). To notify the end of data, the host has to send the [ETX] character (CTRL+C in a keyboard). This character is echoed.</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td>Note: End of data notified</td>
</tr>
</tbody>
</table>
### A.7.2. Download a file from a FTP server : AT#FTPget

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#FTPSERV=&quot;pop3.domain.com&quot; Note: FTP server used</td>
<td>OK</td>
</tr>
<tr>
<td>AT#FTPUN=&quot;ftplogin&quot; Note: FTP username</td>
<td>OK</td>
</tr>
<tr>
<td>AT#FTPPW=&quot;ftppassword&quot; Note: FTP password</td>
<td>OK</td>
</tr>
<tr>
<td>AT#FTPGETFILENAME=&quot;upload.txt&quot; Note: Name of the file stored in the FTP server</td>
<td>OK</td>
</tr>
<tr>
<td>AT#FTPget Note: FTP get</td>
<td>Ok_Info_DataBegin</td>
</tr>
<tr>
<td></td>
<td>Note: Switch from command to data mode. The data are sent over the serial port</td>
</tr>
<tr>
<td></td>
<td>Note: The end of data is notified by the [ETX] character sent over the serial port. It switches from the data to command mode.</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>
A.8. TCP Socket

Open a TCP socket between two machines. One machine acts as a caller (TCP client), and one as a listener (TCP server). Both machines have to be connected to the Internet and set on the same TCP port.

A.8.1. Act as a TCP server: AT#LtcpStart

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
</table>
| AT#TCPSERV=“255.255.255.255”  
*Note: No filter of the incoming TCP client* | OK |
| AT#TCPPORT=“23”  
*Note: TCP port between the TCP client and the TCP server must be the same.* | OK |
| AT#Ltcpstart  
*Note: Launch the listening mode; waiting for an incoming TCP connection from a TCP client.* | OK |
| Data  
*Note: Data flow is bidirectional.* | Data  
*Note: Data flow is bidirectional.* |
| —  
*Note: The socket can be closed locally by the attached host sending an [ETX] character (CTRL+C in a keyboard).* | OK |

Note: Ok_Info_WaitingForData  
*Note: Message sent over the serial port in case of successful TCP socket opening (Telnet for example in the IP address of the Wismo)*

Note: Ok_Info_SocketClosed  
*Note: The socket can be closed by the remote*
A.8.2. Act as a TCP client: AT#OTCP

<table>
<thead>
<tr>
<th>Commands</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT#TCPSERV=&quot;xxx.xxx.xxx.xxx&quot;</td>
<td>OK</td>
</tr>
<tr>
<td>Note: No filter of the incoming TCP client.</td>
<td></td>
</tr>
<tr>
<td>AT#TCPPORT=&quot;23&quot;</td>
<td>OK</td>
</tr>
<tr>
<td>Note: TCP port between the TCP client and the TCP server must be the same.</td>
<td></td>
</tr>
<tr>
<td>AT#otcp</td>
<td>Ok_Info_WaitingForData</td>
</tr>
<tr>
<td>Note: Open, as a TCP client, a socket TCP with a remote TCP server.</td>
<td></td>
</tr>
<tr>
<td>Data</td>
<td>Data</td>
</tr>
<tr>
<td>Note: Data flow is bidirectionnal.</td>
<td></td>
</tr>
<tr>
<td>Note: The socket can be closed locally by the attached host sending an [ETX] character (CTRL+C in a keyboard).</td>
<td>OK</td>
</tr>
<tr>
<td>Note: The socket can be closed by the remote</td>
<td></td>
</tr>
<tr>
<td>Ok_Info_SocketClosed</td>
<td>OK</td>
</tr>
</tbody>
</table>

Data
Note: Data flow is bidirectionnal.