Command List

Input/Output & Datalogger management

EasePro

V2.23

for products

GenPro x25e/x54e

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Document History

Rev	Modifications	Author	Date	Validation	Date
000	Creation	BBO	22/06/2012		
001	Added GenPro 54e	BBO	11/06/2013		
002	Corrections chp 6.1 / chp 6.2 / chp 6.3 Added new GenPro 25e in the title	BBO	20/09/2013		
003	Created document for V2.10. Corrected syntax for GenPro 54e and 25e. Adjusted layout and corrected chapter titles. Corrected commands and descriptions. Added GPRS, SMTP, TCP, FTP +EGKAL, +EGTAK, +EGNTP, +EGCGSM, +EGDWL commands.	MRE	13/01/2014	BBO	15/01/2014
004	Added option to AT+EGOUT command to restore outputs to their saved states at start-up.	MRE	26/05/2014		
005	Adjusted document page headers and footers. Added maximum value description to AT+EGOUT pulse time parameter. Added option to AT+EGPHN command to clear all telephone numbers and options. Added AT+EGUTC command to manage local time offset. Added AT+EGANAS command to manage scaling of the analog inputs. Added individual analog input states and values and individual pulse counters formats to AT+EGFRT command. Added options to AT+EGINC command to reset counters after a log and show counter value in decimal. Increased available GSM initialisation commands with AT+EGCGSM to 10. Added options to AT+EGPHN to allow incoming vocal call for remote access via DTMF and allow incoming call for GSM data connection. Updated description of AT+EGTPH command. Added commands AT+EGFTPSIZE and AT+EGSMTPSIZE to manage maximum size of file for frame transfers. Updated description of AT+EGMAC command. Added option to AT+EGMAC command to clear all macros. Changed maximum size of AT+EGMAC name and action parameters. Added option to AT+EGCGSM command to clear all GSM configuration commands. Added description of execution of macro commands via DTMF codes over a GSM voice call. Added command AT+EGNID to not add the identifier to SMS remote configuration reply SMS. The messages for +EGINP alarms may also include %xx variables. Added AT+EGKASMS command to manage SMS Keep Alive function. Added option to AT+EGPHN command to execute a macro without picking up incoming vocal call. Added the AT+EGLOP and AT+EGKAS commands to manage Low-Power mode and Keep Alive sleep functions. Added AT+EGDSIM command to manage Dual-SIM function. Added APC and V24 options to AT+EGSND command to manage the connection to a remote server and also the transfer of data received on the serial link. Added option "C" to AT+EGSND command to allow transfer time at same minutes after the hour. Added LOW_BAT option to +LOCANA=3 to disconnect battery if voltage too low. Added Hayes registers chapter. Added reference to GenPro 354e.	MRE	07/05/2015	BBO	07/05/2015
006	Added limitation for DTMF functionality concerning 25e/54e modules	MRE	19/05/2015	BBO	19/05/2015
007	Add description for ATQ command. Updated description for AT+EGSND command. Added option "C" to AT+EGSTK command to allow logging time at same minutes after the hour.	MRE	30/09/2015	BBO	01/10/2015
008	Updated description for AT+EGHTC command. Modified AT+EGCGSM default values and added description to force GSM in 2G or 3G mode. Corrected maximum string lengths for the SMTP configuration. Added options "%s" and "%S" to AT+EGFPF and AT+EGSUBJ commands. Added AT+EGTIMCTR command to manage a time counter. Added parameters "TC" and "%T" to AT+EGFRT chapter. Added the AT+EGPWO command to manage the external power-out control. Analog input 2 is present by default. Updated parameter description for AT+EGANA command. Added important note to AT+EGMAC command concerning the position of SMS commands in macros.	MRE	22/02/2016	BBO	09/03/2016

Rev	Modifications	Author	Date	Validation	Date
009	Adjusted document page headers and footers. Added commands AT+EGCUA to manage capture UART with log and AT+EGINPU to manage detection of a sequence of characters in the captured UART string and log and send SMS. Updated +EGFRT equivalence table in +EGTPH chapter. Modified AT+EGTIMCTR command to allow a time counter for each digital input. Added parameters "TC1", "TC2", "TC3", "TC4", "TC5" to AT+EGFRT chapter. Added command AT+EGFRTDT to be able to specify various formats for the date and time information in the logged frame. Added description of AT+EGHCLR command to clear frames. Added command AT+EGFRTX to allow extra fields to be specified for the frame format. Added an option to the command AT+EGRST to log/not log the programmed reset event. Modified command AT+EGRST maximum interval. Updated description for the AT+EGHTC command. Modified command AT+EGSND to allow transmission of frames once every 7 days. Added description of the command AT+EGCMGS.	MRE	20/04/2017	BBO	20/04/2017

The main modifications in this document compared to its previous version are easily identifiable by the blue colour of the text.

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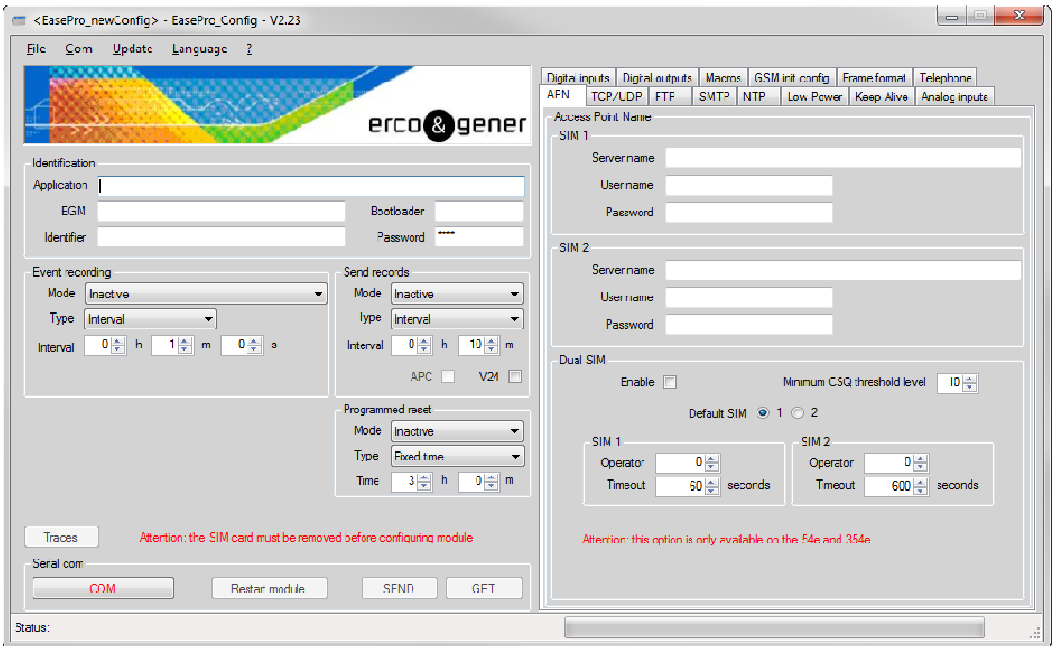
DESCRIPTION

1.1 Introduction

The **GenPro xxe AOB** modem family is designed around an ARM7 processor and a GSM/GPRS module. This results in a complete system in a single compact package.

The application **EasePro** dedicated to the **GenPro xxe AOB** family and described in this document has been developed using the **EGM®** software tools made available by **ERCOGENER** and is intended to be loaded directly into the unit.
This has resulted in the realization of a completely autonomous product requiring little or no intelligence connected to it.

The application **EasePro** may be easily configured by means of the **EasePro_Config** configuration tool which runs on Windows®. This will greatly simplify configuration by avoiding the need to know the details of the AT command list for the application **EasePro.**



1.2 Main features

EasePro provides 2 complementary modes of operation:

1.2.1 Inputs / Outputs management

EasePro allows the transmission of alert SMS to one or several numbers, upon a change of status of the digital and analog inputs.
Each input and its status can be associated to different messages.

1.2.2 Datalogger mode

EasePro provides a Datalogger function for recording cyclic records and events in custom definable frames.
The frame can contain the inputs status (digital status or counting mode), the limits and analog values, date/time, “Logging Code” and a customizable identification name.
The frames are recorded in Flash memory in a circular buffer which ensures several thousands of records (the exact number depends on the selected frame format).
The frames stored may be sent via IP, SMTP or SMS, (or several SMS depending on the size of data to be sent).

Note **:** the **Inputs / Outputs modes management** and **Datalogger** can operate simultaneously depending on the setting selected for each input.

1.3 Configuration of the application

- All functions can be configured via an AT command set developed by **ERCOGENER**. The configuration may be done locally via the RS232 serial port or remotely by SMS or TCP.
- The parameters modified by the AT commands are automatically saved in Flash memory if all the parameters are correct and within limits.

1.4 Additional functions

- Remote configuration by SMS with an access password or an authorized telephone number.
- Macro Commands mode allowing easy remote configuration by SMS.
- Protection by password for the access to AT commands (via RS232 serial port).
- Programmable daily reset.
- Control of output(s) of the modem by SMS.

1.5 APPLICATION COMMANDS

1.6 General

All commands must begin with "**AT+**". The commands may be entered with either the "**+EG**" **or +** "**+LOC**" prefix. For example **AT+LocPSW=?** is the same as **AT+EGpsw=?**. The command name may be entered in either upper or lowercase.

The commands may be configured either via the serial link, from a connected TCP server or by SMS.

- If a password different from “0000” is programmed, this password will have to be entered to enable all further access.
- All commands entered via the serial link must be terminated with <CR>.
- The concatenation of commands sent via the serial link can only be used with at least <CR> between each complete command.
- The command "A/" sent via the serial link will repeat the last command entered.

1.6.1 AT+EGVPAR – Display all parameters

Description:

This command will display the complete current configuration of the unit.

Syntax:

AT+EGVPAR

Examples:

Command	**Possible responses**	Notes
AT+EGVPAR	`Display parameters…` … … … `OK`	*Display all current parameters.*

2 INPUTS/OUTPUTS MANAGEMENT

2.1 Description

SMS messages may be triggered upon logic and/or analog inputs events and also to manage the outputs:

- A change of status on an Input or an analog level will trigger an SMS with a predefined message to be sent to one or several recipients.
- In case of failure during the transmission of an SMS, 3 attempts are allowed and then the SMS will be deleted. The next SMS will then be sent.
- The output(s) status can be remotely modified by SMS control.

2.1.1 +EGPSW / +LOCPSW – Password

Description:

This command will manage a password which will authorize via the local UART the access to the commands and also for the SMS remote management in the case where the telephone number of the sender is not allowed in the modem phone list (AT+EGPHN).

Syntax:

AT+EGPSW=<PaSsWord>[,<newPWD>]

Examples:

Command	Possible responses	Notes
AT+EGPSW=?	+EGPSW: 8,8 OK	*Display syntax. Maximum length of password.*
AT+EGPSW =”xxxx”	AUTHORIZED ACCESS OK	*xxxx represents the current password. Authorization for access to configuration commands*
AT+EGPSW?	AUTHORIZED ACCESS OK	*Display current configuration, access authorized*
AT+EGPSW =”OLD”,”NEW”	OK	*Change password. Immediately saved in flash. If it is the first time the old value should be empty “”*
AT+EGPSW=”xxxx”,”ERASE”	OK	*Complete erasure of flash. Then, reset by AT+EGMRST=0 to reinitialize default parameters. With xxxx representing the current password.*
AT+EGPSW	OK	*Stop access*
AT+EGPSW?	NON-AUTHORIZED ACCESS OK	*Access unauthorized*

Defined values:

<**PaSsWord**> Current password entered as an ASCII string, for example : “0000”.

<**newPWD**> New password or “ERASE” allowing the complete erasure of the flash memory.

Notes:

- Maximum length of the password: 8 characters.
- Password is case-sensitive.
- Password by default: "0000".
- If the password is not modified (default value still exists), complete access is allowed.

2.1.2 +EGINP / +LOCINP – Inputs configuration

Description:

This command will configure the use of the digital and analogic inputs to trigger action (digital or counter mode, SMS alarm mode, Datalogger mode, etc.) .

Syntax:

AT+EGINP=<n>,<o>,<t>,<x>,<y>,<z>,<l> (case1 : INput configuration)
AT+EGINP=<n>,<o>,<t>,<x> (case2 : INput configuration Messages)
AT+EGINP=<n>,<o>,<t> (case3 : INput configuration Phones list)

Examples:

Command	Possible Responses	Notes
AT+EGINP=?	+EGINP: ("I1"-"I5";"A0"-"A3"),(0-1)(0-65535),("O","C"),("S","D","P","T"),(0-3),(0-1) +EGINP: ("I1"-"I5";"A0"-"A3"),("O"-"C"),"Message",(0-1) +EGINP: ("I1"-"I5";"A0"-"A3"),("P"),"Phone index" OK	*Display syntax for GenPro x54e*
AT+EGINP?	+EGINP: I1,0,0,"O","D",0,0 +EGINP: I1,"C","INPUT 1 ON",1 +EGINP: I1,"O","INPUT 1 OFF",1 +EGINP: I1,"P" +EGINP: I2,0,0,"O","D",0,0 +EGINP: I2,"C","INPUT 2 ON",1 +EGINP: I2,"O","INPUT 2 OFF",1 +EGINP: I2,"P" +EGINP: I3,0,0,"O","D",0,0 +EGINP: I3,"C","INPUT 3 ON",1 +EGINP: I3,"O","INPUT 3 OFF",1 +EGINP: I3,"P" +EGINP: I4,0,0,"O","D",0,0 +EGINP: I4,"C","INPUT 4 ON",1 +EGINP: I4,"O","INPUT 4 OFF",1 +EGINP: I4,"P" +EGINP: I5,0,0,"O","D",0,0 +EGINP: I5,"C","INPUT 5 ON",1 +EGINP: I5,"O","INPUT 5 OFF",1 +EGINP: I5,"P" +EGINP: A0,"L","ANALOG 1 LOW",1 +EGINP: A0,"N","ANALOG 1 NRML",1 +EGINP: A0,"H","ANALOG 1 HIGH",1 +EGINP: A0,"P" +EGINP: A1,"L","ANALOG 2 LOW",1 +EGINP: A1,"N","ANALOG 2 NRML",1 +EGINP: A1,"H","ANALOG 2 HIGH",1 +EGINP: A1,"P" +EGINP: A2,"L","ANALOG 3 LOW",1 +EGINP: A2,"N","ANALOG 3 NRML",1 +EGINP: A2,"H","ANALOG 3 HIGH",1 +EGINP: A2,"P" +EGINP: A3,"L","ANALOG 4 LOW",1 +EGINP: A3,"N","ANALOG 4 NRML",1 +EGINP: A3,"H","ANALOG 4 HIGH",1 +EGINP: A3,"P" OK	*Display current configuration for GenPro x54e*
AT+EGINP	+EGINP: 1,8 +EGINP: 2,2 +EGINP: 3,0 +EGINP: 4,0 +EGINP: 5,3 OK	*Number of changes of state of the logic inputs if they are configured Display syntax for GenPro x54e*

Defined values:

<n> "**In**" or '**n**' only for logic input, n=1 to 3 for GenPro x25e (1 to 5 on GenPro x54e).
"**An**" for analog inputs, 0 to 3. These values are only used for the cases 2 and 3. Use AT+EGANA for complete analog inputs configuration.

Case 1 :

<o> Input action activation
0 – No action but the input is managed and its status can be added to the frame.
1 – The status change of this input activates an action.

<t> Time of presence of the active input before action from 0 (inactive) to 65535 (time base 10 ms).

<x> Input rest status: "**O**" for Open and "**C**" for Closed.

<y> Type of management at change of status:
"**S**" for Single, the change from rest to active initiates the action.
"**D**" for Double, the change from rest to active and from active to rest initiates the action.
"**P**" for Pulse, the change from rest to active manages the counter (see chapter **3.2.1 +EGFRT / +LOCFRT – Frame format** for the field "**PC**").
"**T**" for time counter, the time counter will be incremented when the digital input is active (see chapter **2.1.15 +EGTIMCTR / +LOCTIMCTR – Time**).

<z> **0** – no action (default).
1 – send an SMS containing the text message defined below.
2 – reserved.
3 – trigger a local reset of the modem.

<l> **0** – no logging (default).
1 – store a frame with the new status and parameters as defined in AT+EGFRT.

Case 2 :

<o> is "**O**" or "**C**" or "**L**" or "**N**" or "**H**":
"**O**", The next parameter indicates the message that will be sent for the opened logic state.
"**C**", The next parameter indicates the message that will be sent for the closed logic state.
"**L**", The next parameter indicates the message that will be sent when the analog input level goes below the Low limit.
"**N**", the next parameter indicates the message that will be sent when the analog input level goes between Low and High limits (Normal state).
"**H**", the next parameter indicates the message that will be sent when the analog input level goes above the high limit.

The messages may also include %xx variables (see chapter **4.2.3 +EGTPH / +LOCTPH – Custom frame format**).

<t> Message included in the SMS, maximum length 160 characters.

<x> **0** - the identification string is not added.
1 - the identification string is added (AT+EGIDT), (default).

Case 3 :

<o> is "**P**" to configure the list of the phone indexes.

<t> Phone indexes affected to this input. The phone indexes must be filled with the comma separator and with a maximum of 13 indexes.
The phone indexes may be entered as individual index values or as ranges,
e.g.: AT+EGINP=1,"P",3,24,"31-40",50,"60-70".

Use AT+EGPHN to enter the corresponding phone number.

If <**t**> is "**RESET**" then the list of phone indexes associated with this input will be erased.

Notes:
Default configuration for a GenPro x54e :

```
+EGINP: I1,0,0,"O","D",0,0
+EGINP: I1,"C","INPUT 1 ON",1
+EGINP: I1,"O","INPUT 1 OFF",1
+EGINP: I1,"P"
+EGINP: I2,0,0,"O","D",0,0
+EGINP: I2,"C","INPUT 2 ON",1
+EGINP: I2,"O","INPUT 2 OFF",1
+EGINP: I2,"P"
+EGINP: I3,0,0,"O","D",0,0
+EGINP: I3,"C","INPUT 3 ON",1
+EGINP: I3,"O","INPUT 3 OFF",1
+EGINP: I3,"P"
+EGINP: I4,0,0,"O","D",0,0
+EGINP: I4,"C","INPUT 4 ON",1
+EGINP: I4,"O","INPUT 4 OFF",1
+EGINP: I4,"P"
+EGINP: I5,0,0,"O","D",0,0
+EGINP: I5,"C","INPUT 5 ON",1
+EGINP: I5,"O","INPUT 5 OFF",1
+EGINP: I5,"P"
+EGINP: A0,"L","ANALOG 1 LOW",1
+EGINP: A0,"N","ANALOG 1 NRML",1
+EGINP: A0,"H","ANALOG 1 HIGH",1
+EGINP: A0,"P"
+EGINP: A1,"L","ANALOG 2 LOW",1
+EGINP: A1,"N","ANALOG 2 NRML",1
+EGINP: A1,"H","ANALOG 2 HIGH",1
+EGINP: A1,"P"
+EGINP: A2,"L","ANALOG 3 LOW",1
+EGINP: A2,"N","ANALOG 3 NRML",1
+EGINP: A2,"H","ANALOG 3 HIGH",1
+EGINP: A2,"P"
+EGINP: A3,"L","ANALOG 4 LOW",1
+EGINP: A3,"N","ANALOG 4 NRML",1
+EGINP: A3,"H","ANALOG 4 HIGH",1
+EGINP: A3,"P"
```

2.1.3 +EGANA / +LOCANA – Analog inputs activation

Description:

This command configures the thresholds triggering of the analog inputs.

Syntax:

AT+EGANA=<n>,<o>,<int>,<thLow>,<thHigh>,<"double">,<hyst>,<log>,<lowbat>

Examples:

Command	Possible Responses	Notes
AT+EGANA=?	+EGANA: (0-3,10),(0-1),(0-255),(Low-threshold:0-65000),(High-threshold:0-65000),("S","D"),(Hysterisis:0-65000),(0-1),(0-1) OK	*Display syntax.*
AT+EGANA?	+EGANA: 0,0,0,0,10000,"S",500,0 +EGANA: 1,0,0,0,10000,"S",500,0 +EGANA: 2,0,0,0,10000,"S",500,0 +EGANA: 3,0,5,3550,4460,"S",10,0,1 OK	*Display current configuration.*
AT+EGANA	+EGANA: 0,11303,10730,11398,H +EGANA: 1,2086,0,2096,N +EGANA: 2,3365,0,3365,N +EGANA: 3,4392,4348,4401,N OK	*Show current levels on all inputs (see notes below).*
AT+EGANA=1	+EGANA: 1,0,0,0,10000,"S",500,0 OK	*Show current level on one input only.*
AT+EGANA=1,1,1,3000,7000	OK	*Set configuration for one input.*
AT+EGANA=1	+EGANA: 1,1,1,3000,7000,"S",500,0 OK	*Show current level on one input only.*
AT+EGANA=10	+EGANA: 10,0 OK	*Show current division by 10 configuration.*
AT+EGANA=10,1	OK	*Set current division by 10 configuration.*

Defined values:

<n>

Channel input (0 to 3).
- 0: External supply voltage.
- 1: User analog input 1 (optional on GenPro 25e/ 325e).
- 2: User analog input 2 (optional on Genpro 25e).
- 3: Internal supply voltage.
- 10: Divide analog values in frame by 10 (see <**o**> below).

<o>

Input action activation
- 0: No action but the input is still managed and its status can be added to the frame.
- 1: The change of status of this input triggers an action.

If <**n**> is 10 then:
- 0: Do not divide analog values in frame by 10 (default).
- 1: Divide analog values in frame by 10. This allows values greater than 9999mV to be correctly shown in the frame.

<int>

Integration count value, 100ms steps.
- 0: Channel is disabled (default)
- 1: Reserved
- 2 - 255 : Enabled.

<**thLow**>
Low threshold value mV (0 default – 65000).

<**thHigh**>
High threshold value mV (0 – 65000), default 10000.

<**double**>
Single or double threshold transition detection ("S" default or "D").

<**hyst**>
Hysteresis level mV (0 - 65000), default 500mV.

<**log**>
0: No logging (default)
1: Store a frame with the new status and parameters defined in AT+EGFRT.

<**lowbat**>
0: Disabled.
1: Enabled. (default) Disconnect battery if voltage too low to avoid complete discharge of battery. Channel 3 (Internal Supply Voltage) only.

Notes:

- The command **AT+EGANA** with no parameters will return the following response:

  +EGANA: 0,<currentValue>,<minValue>,<maxValue>,<status>
  +EGANA: 1,<currentValue>,<minValue>,<maxValue>,<status>
  +EGANA: 2,<currentValue>,<minValue>,<maxValue>,<status>
  +EGANA: 3,<currentValue>,<minValue>,<maxValue>,<status>

<**currentValue**>	Current value on the channel.
<**minValue**>	Minimum value measured on the channel.
<**maxValue**>	Current value measured on the channel.
<**status**>	Current status on the channel (H, N, L)

  The minimum and maximum values will be reset after the configuration command.
  H, N, and L correspond to the current alert status of the channel (High, Normal or Low).

- All voltage values are in milli-volts.

- Default configuration :
  +EGANA: 0,0,0,0,10000,"S",500,0
  +EGANA: 1,0,0,0,10000,"S",500,0
  +EGANA: 2,0,0,0,10000,"S",500,0
  +EGANA: 3,0,5,3550,4460,"S",10,0,1

- When using the LOW BAT option for the internal supply voltage analog input, the following default parameters should be used:
  AT+EGANA: 3,0,5,3550,4460,"S",10,0,1

  int = 5 secs
  thLow = 3550 mV
  thHigh = 4460 mV
  Hyst = 10 mV
  lowBat = enabled

  The hysteresis value must be low enough to ensure correct detection of the low threshold before the detected voltage goes below the circuit operation voltage. A value of about 10mV is recommended. This will ensure that at 3550 – 10 = 3540 mV the circuit is still operating.

  The low threshold of 3550 mV is recommended to ensure that the battery does not start to completely discharge.

The high threshold is set to 4460 mV which will detect an over-voltage of the internal operating voltage. When the external power is present the circuit operating voltage is about 4400 mV.

The battery will be disconnected after the delay specified by the AT+EGTAK timeout (the AT+EGTAK does not have to be enabled).

If the network is OK then any pending SMSs will be sent before disconnecting the battery.

- If the divide by 10 option is enabled, then the values in the frame will be divided by 10. This allows values greater than 9999mV to be correctly recorded in the frame.
  For example, if the value at user input 1 is 12345 mV, then the value in the frame will be “1235”. If the value at user input 1 is 3248 mV, then the value in the frame will be “0325”.

2.1.4 +EGANAS / +LOCANAS – Analog inputs scaling

Description:

This command configures the scaling parameters for the analog inputs. Scaling is achieved by the formula:

$$y = ax^3 + bx^2 + cx + d$$

Where:

x is the original measured voltage in Volts,

a, b, c are the scaling coefficients, default: $a = 0, b = 0,\ c = 1$

d is a constant, default: $d = 0$

y is the scaled value.

Free text may be added after the scaled value to indicate "units":

AT+EGANAS=0,"0","0","1000","0",3," Volts"

For example, if the value measured on channel 0 is **11043** then this will result in the following output for channel 0:

"**11.030 Volts**"

Syntax:

AT+EGANAS=<n>,<"ax3">,<"bx2">,<"bx">,<"d">,<decimals>,<"text">

Examples:

Command	Possible Responses
AT+EGANAS=?	+EGANAS: (0-3),("ax3"),("bx2"),("cx"),("d"),(0-6),("text") OK *Display syntax*
AT+EGANAS?	+EGANAS: 0,"0.000","0.000","1.000","0.000",3,"" +EGANAS: 1,"0.000","0.000","1.000","0.000",3,"" +EGANAS: 2,"0.000","0.000","1.000","0.000",3,"" +EGANAS: 3,"0.000","0.000","1.000","0.000",3,"" OK *Display current configuration.*
AT+EGANAS=2,"-0.2","3","3","-20",1," metres"	OK *Set configuration*
AT+EGANAS=0	+EGANAS: 2,"-0.2","3.0","3.0","-20.0",1,"meters" OK *Show current configuration for one input only*
AT+EGANAS=3,"0","0","1","0",3," Volts"	OK *Set configuration*
AT+EGANAS?	+EGANAS: 0,"0.000","0.000","1.000","0.000",3," Volts" +EGANAS: 1,"0.000","0.000","1.000","0.000",3,"" +EGANAS: 2,"-0.2","3.0","3.0","-20.0",1," metres" +EGANAS: 3,"0.000","0.000","1.000","0.000",3," Volts" OK *Display current configuration*

Defined values:

<n>
Channel input (0 to 3).
0: External supply voltage.
1: User analog input 1 (optional).
2: User analog input 2 (optional).
3: Internal supply voltage.
"RESET": Reset all scaling parameters for all channels to their default values.

<ax3>
Scaling parameter. May be +/- with decimal places. Default: "0".

<bx2>
Scaling parameter. May be +/- with decimal places. Default: "0".

<cx>
Scaling parameter. May be +/- with decimal places. Default: "1".

<d>
Constant scaling parameter. May be +/- with decimal places. Default: "0".

<decimals>
Number of decimal places to be displayed. Maximum 6. Default: 3.

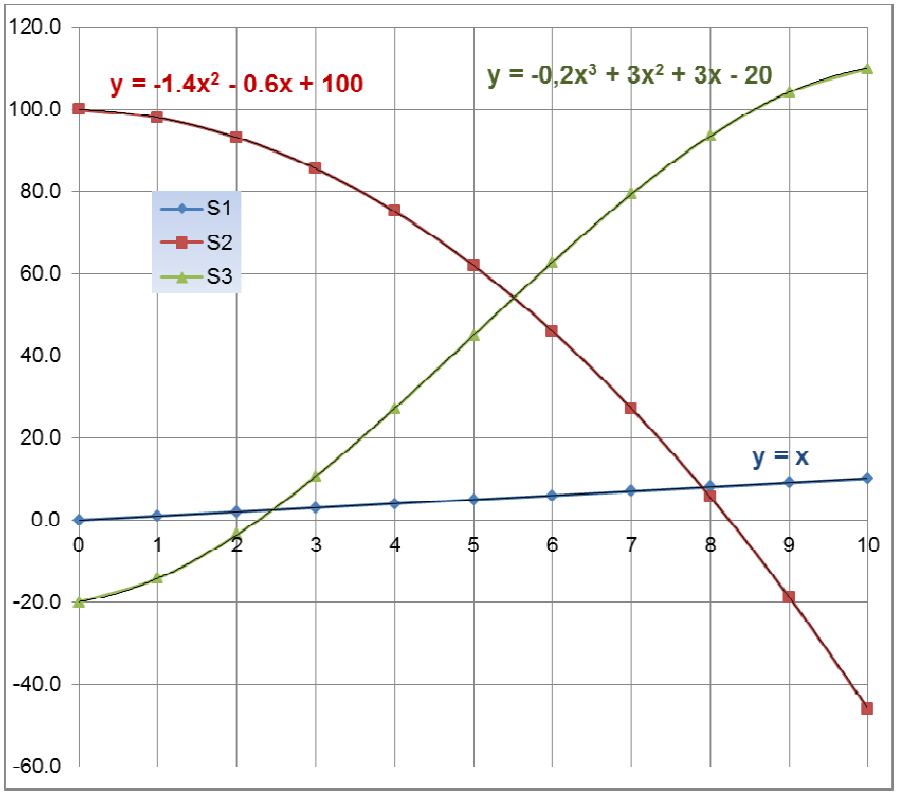
<text>
ASCII text information. Maximum 14 characters. The character '**,**' (comma) is not allowed. Default: "" (empty).

Notes:

- The scaling function may be used to process the voltage read into a more meaningful value.
- The table and graphs below give an idea of the use of the scaling function:

a	**0**	**0**	**-0.2**
b	**0**	**-1.4**	**3**
c	**1**	**-0.6**	**3**
d	**0**	**100**	**-20**

Vin	S1	S2	S3
0	0.0	100	-20
1	1.0	98	-14.2
2	2.0	93.2	-3.6
3	3.0	85.6	10.6
4	4.0	75.2	27.2
5	5.0	62	45
6	6.0	46	62.8
7	7.0	27.2	79.4
8	8.0	5.6	93.6
9	9.0	-18.8	104.2
10	10.0	-46	110



2.1.5 +EGINC / +LOCINC – measure logic input

Description

This multi-purpose command can convert the counter value for logic inputs.

Syntax

Command syntax : **AT+EGINC=<input>[,<mult>][,][,<options>]**
Command syntax : **AT+EGINC=<input>**
Response syntax: **+EGINC: <input>,<value>**

Command syntax : **AT+EGINC?**
Response syntax: **+EGINC: <input>,<current>,<converted>,<mult>, ,<options>**

Command	Possible responses	Notes
AT+EGINC=?	`+EGINC: [(1-5,9)][RESET],[(1-65535)(RESET),(1-65535),(0-255)]` OK	*Display syntax.* *1-3) For GenPro x25e* *(1-5) For GenPro x54e*
AT+EGINC=1	`+EGINC: 1,4418` OK	*Get input 1 converted value*
AT+EGINC?	`+EGINC: 1,50,50,1,1,0` `+EGINC: 2,1500,2250,3,2,0` `+EGINC: 3,0,1,1,0` OK	*<input>,<current>,<converted>,<mult>, , <logRstr>* *Get input, current counter value, converted value, multiplier and divisor values and logRst configuration.* *(Example syntax for GenPro x25e.)*
AT+EGINC=2,100,2	OK	*Set multiplier and divisor values.*
AT+EGINC="RESET"	OK	*Reset all counter values to zero now*
AT+EGINC=1,"RESET"	OK	*Reset input 1 counter to zero now*

Defined values

<input>

1 to 3 : for GenPro x25e
1 to 5 : for GenPro x54e
"RESET" : Reset all counters for all inputs to zero.

<mult>

Multiplier value (1 – 65535)
"RESET" : Reset counter for <**input**> only to zero.

** **

Divisor value (1 – 65535)

<options>

Options bit-mask:

1 : Reset counter for <**input**> only to zero after each log. Log will contain delta value. **Default**: do not reset counter for <**input**> only to zero after each log. Log will contain accumulated value.
2 : Show pulse counter value for <**input**> in decimal. **Default**: hexadecimal.
4 : -
8 : -
16 : -
32 : -
64 : -
128 : -

Notes:

Default configuration for a GenPro x54e :

+EGINC:1,0,0,1,1,0
+EGINC:2,0,0,1,1,0
+EGINC:3,0,0,1,1,0
+EGINC:4,0,0,1,1,0
+EGINC:5,0,0,1,1,0

2.1.6 +EGADC – measure analogue inputs

Description:

This multi-purpose command can measure the voltage on one of the analogue inputs, check and adjust the reference voltage value to be used when determining the actual analogue voltage and check and adjust the external resistance multiplier and divisor values on the analogue inputs.

Command syntax : **AT+ EGADC=<channel>[,<mult>][,][,<offset>]**
AT+ EGADC=<channel>[,<Vref>]

Response syntax: **+EGADC: <channel>,<value mv>**
: <channel>,<Vref mV>
: <channel>,<mult>, ,<offset>

Command	Possible Responses
AT+EGADC=?	+EGADC: (0-4,8),(0-65535),(0-65535),"+/-(0-32767)" OK *Note: Possible values for GenPro x54e*
AT+EGADC=3	+EGADC: 3,4418 OK *Note: Get internal supply voltage.*
AT+EGADC=3,0,0	+EGADC: 3,2715,2000,"0" OK *Note: Get current multiplier and divisor values.*
AT+EGADC=3,200, 100	OK *Note: Set multiplier and divisor values.*
AT+EGADC=8	+EGADC: 8,3300 OK *Note: Get reference voltage.*
AT+EGADC=8,3300	OK *Note: Set reference voltage.*

Defined values:

<**channel**> 0 External supply voltage (for GenPro x25e only)
1 User GPIO input voltage (for GenPro x25e if option is present via GPIO2)
2 Analogue input 3 (for GenPro x25e if option is present via SPK2N)
3 Internal supply voltage
4 External supply voltage (Genxxe x54e only)
8 Reference voltage (default = 3300mV)

<**mult**> Multiplier value (0 – 65535)

<**div**> Divisor value (0 – 65535)

<**Vref**> Reference voltage in mV (1 – 65535)

<**Offset**> The offset value (0 to “+/-32767” mV). This offset may be set to compensate for a non-zero input voltage when using the input as part of a 4-20mA current loop. For example, 4mA into 150 ohms requires the offset to be set to “-600” mV so that the command returns 0 Volts.

Notes:

All voltages are in milli-volts.

If both the multiplier and divisor values are specified as 0 then the current multiplier and divisor values for the specified channel will be returned.

The default values for each channel are:

Channel	Multiplier	Divisor	Offset (mV)	Notes
0	987	100	0	x25e
0	200	100	0	x54e
1	3050	1000	0	x25e / x54e
2	3050	1000	0	x25e / x54e
3	2715	2000	0	x25e / x54e
4	3050	1000	0	x54e

Example: For a maximum input voltage of 10 Volts then the series input resistance is 20k5 ohms and the parallel input resistance is 10k ohms. The voltage at the input to the ADC on the CPU is:

Vadc = Vin x 10k / (10k + 20k5) = Vin x 1000 / 3050.

i.e.: the measured value must be multiplied by 3050 (multiplier) and divided by 1000 (divisor) to obtain the real value at input to the input.

2.1.7 +EGPHN / +LOCPHN – Authorized telephone numbers

Description:

This command will configure the telephone numbers that will be used for SMS transmission and also for the authorized numbers for configuration by SMS GSM data connection as well as to execution of macro commands by DTMF (see chapter **7.3 DTMF codes over a GSM voice call)** or by simple number recognition without picking up call.

Syntax:

AT+EGPHN=<x>[,<nnn>,<y>,macro] (PHoNe)

Examples:

Command	Possible Responses	Notes
AT+EGPHN=?	+EGPHN: (1-300),20,(0-255),(0-20) OK	*Display syntax*
ATEGPHN=x,,y	OK	*Modify only the function parameters for an existing telephone number*
AT+EGPHN=1, "+33612345678",129	OK	*Program a destination number for SMS and for remote access*
AT+EGPHN?	+EGPHN: 1,"+33612345678",129,0 OK	*Display all saved telephone numbers.*
AT+EGPHN=1	+EGPHN: 1,"+33612345678",129,0 OK	*Display saved telephone number at index 1.*
AT+EGPHN=1,""	OK	*Erase telephone number of index 1.*

Defined values:

<x>

Index (1-300)

If **<x>** is "**RESET**" then all telephone numbers and options will be cleared.

<nnn>

Telephone number (20 digits max.). It is advisable to enter the telephone number in the international format : "**+**yyxxxxxxx"

<y>

Bit map allowing to select the function using this telephone number:

- 1 (bit 0) Destination number. Send in SMS mode.
- 2 (bit 1) Reserved
- 4 (bit 2) Reserved
- 8 (bit 3) Reserved
- 16 (bit 4) Allow incoming vocal call to execute macro commands without picking up call.
- 32 (bit 5) Allow incoming vocal call for remote access via DTMF (see chapter **7.3 DTMF codes over a GSM voice call**).
- 64 (bit 6) Allow incoming call for GSM data connection.
- 128 (bit 7) Allow remote configuration via received SMS.

<macro>

Macro (0-20). Default = 0.

If non-zero, then the macro will be executed without picking up the recognised incoming vocal call. If the macro is not programmed then no action is taken. Note that the **AT+EGMAC <name>** parameter must always be set (even if not required for a recognised incoming vocal call).

2.1.8 +EGOUT / +LOCOUT – Output Activation

Description:

This command will manage the output(s) : forced / temporary closed / opened.

Syntax:

AT+EGOUT=<n>,<x>,<y> (OUTput)

Examples:

Command	Possible responses	Notes
AT+EGOUT=?	+EGOUT: (0,9),(0-1),(0-255) OK	*Display syntax for GenPro x25e (one output)*
AT+EGOUT=?	+EGOUT: (0-2,9),(0-1),(0-255) OK	*Display syntax for GenPro x54e (three outputs)*
AT+EGOUT=0,1,10	OK	*Close Output 0 for 1000ms (10x100ms)*
AT+EGCOUT?	+EGOUT: 0,1 +EGOUT: 1,0 +EGOUT: 2,0 +EGOUT: 9,0 OK	*Display the current configuration for GenPro x54e*
AT+EGOUT=2,1	OK	*Close Output 2*
AT+EGOUT?	+EGOUT: 0,0 +EGOUT: 1,0 +EGOUT: 2,1 +EGOUT: 9,0 OK	*Display the current configuration*

Defined values:

<n> Output number, 0 (0 for GenPro x25e, 0 to 2 on GenPro x54e).
9,0 : Do not restore outputs to their saved states at the start-up (default).
9,1 : Restore outputs to their saved states at the start-up.

<x> 0 : open.
1 : closed.

<y> If different to 0 then <y> = the pulse time (time base 100 ms).
Maximum value is 65535 (6553.5 seconds).

Default configuration for a GenPro x54e :

+EGOUT: 0
+EGOUT: 0
+EGOUT: 0

Note : In case of reset or power OFF/ON of the unit, all output states are set to 0.
The current output states are not saved in the flash memory unless the option to restore outputs to their saved states at the start-up is set.

2.1.9 +EGRST / +LOCRST – Programmed Reset

Description:

This command will configure the automatic reset of the module. This reset can be used to avoid possible lock-up of the application due to a random rejection by the GSM network.

This function uses the internal clock of the GSM module which is set by the command : **AT+CCLK="yy/MM/dd,hh:mm:ss±TZ"** or by the **NTP function** (see chapter 5.1 **+EGNTP / +LOCNTP – SNTP configuration**) and takes into account the local time offset set by AT+EGUTC.

Notes:

In case of power OFF or Reset, the Date and Time are saved only if the modem has an internal backup battery (standard for GenPro x54e / Option for GenPro x25e).

Syntax:

AT+EGRST=<mode>[,<type>][,<p>][,<time>][,log] (ReSeT)

Examples :

Command	Possible Responses	Notes
AT+EGRST=?	+EGRST: (0-3),(0-1),(0-1),"HH:MM",(0-1) OK	*Display syntax*
AT+EGRST=1,0,0,"03:00",1	OK	*Set a daily general reset at 03h00*
AT+EGRST?	+EGRST: 1,0,0,"03:00",1 OK	*Display current configuration*
AT+EGRST=1,0,1,"72:30",1	OK	*Set a general reset every 72 hours 30 minutes*
AT+EGRST?	+EGRST: 1,0,1,"72:30",1 OK	*Display current configuration*
AT+EGRST=0	OK	*Deactivate the reset feature*

Defined values:

<mode>

0 : reset inactive.
1 : reset active.
2 : Reserved for future development
3 : Reserved for future development

<type>

0 : General
1 : GSM only

<p>

0 : Fix time, each day (maximum 23:59)
1 : Interval, every HHH:MM hours (maximum 999:00)

<time> "HHH:MM"
HH = hours, MM = minutes.

<log>

0 : Do not log event
1 : Log event

Default configuration:

+EGRST:0,0,0,"03:00",1

2.1.10 +EGIOS / +LOCIOS – Input and output states

Description:

This command will read the status of the inputs and outputs.

Syntax:

AT+EGIOS? (Input Output States)

Examples :

Command	Possible responses	Notes
AT+EGIOS?	+EGIOS: I1-0; I2-1; I3-0; I4-0;I5-1;S0-0;S1-0;S2-1 OK	*Display the I/O states for a GenPro x54e* ***For inputs:*** *0 = active / 1 = inactive* ***For outputs:*** *0 = opened / 1 = closed*

Default configuration :

none

2.1.11 +EGIDT / +LOCIDT – Identifier

Description:

This command will configure an identifier allowing easier identification of the device when sending information.

Syntax:

AT+EGIDT=<mode>,<type>,<IdenTifier>

Examples:

Command	Possible Responses	Notes
AT+EGIDT=?	+EGIDT: (0-2),50,(255) OK	*Display syntax.*
AT+EGIDT=0,"My_Device_23",0	 OK	*Enter the new identifier.*
AT+EGIDT?	+EGIDT: 0," My_Device_23",0 OK	*Display the current identifier.*

Defined values:

<mode>

For future development : set the value to “0”

<IdenTifier>

Value of the identifier entered as an ASCII string.
Example: “My_Device_23"

<delay> For future development. Set the value to “0”

Notes:

Maximum length of the identifier: 50 characters.

Default configuration :

IMEI number (read by AT+CGSN at start-up).

2.1.12 +EGMAC / +LOCMAC – Macro commands

Description:

This command configures the AT commands that will be executed upon reception of a predefined SMS text or a valid DTMF (see chapter **7.3 DTMF codes over a GSM voice call)** sequence or a recognised incoming vocal call.
For example, it could be used to manage an output with a SMS such as "OUT1".
If the macro name contains only the digits 0-9 then the macro may be accessed via the DTMF access.

Syntax:

AT+EGMAC=<n>,<name>,<action> (MACro)

Examples:

Command	Possible Responses	Notes
AT+EGMAC=?	+EGMAC: (1-20),"NAME","AT+COMMAND" OK	*Display syntax.*
AT+EGMAC=1,"OUT 1","AT+EGOUT=0,1, 50"	OK	*Set the Macro Command 1 and its AT command*
AT+EGMAC?	+EGMAC: 1,"OUT1","AT+EGOUT=0,1,50" +EGMAC: 2,"SMS2","AT+EGOUT=1,1,50" +EGMAC: 3,"SMS3","AT+EGMRST=0" +EGMAC: 4,"123","AT+EGOUT=0,1,50" OK	*Display the current configuration*
AT+EGMAC=2	+EGMAC: 2,"SMS2","AT+EGOUT=1,1,50" OK	*Display the current configuration for Macro Command 2*
AT+EGMAC=1,"",""	OK	*Erase the Macro Command 1*
AT+EGMAC=1,0	OK	*Erase the Macro Command 1*

Defined values:

<n> Macro command number (1 – 20).
If **<n>** is "**RESET**" then all the macros will be cleared.

<name> "text SMS received" not case-sensitive (max size 15 characters).
Or only the digital characters "0"-"9" for DTMF remote access.

<action> "AT+COMMAND" (max size 100 characters). Multiple commands must be separated by a space.

Example : close the output1 for 5 seconds:
AT+EGMAC=1,"OUT1","AT+EGOUT=0,1,50"

Notes:

- It is not possible to enter ' **"** ' in the <**action**> parameter. The ' **"** ' must be entered as ' ***** '.
  Example: **AT+EGMAC=6,"ASV2","AT+EGASV=*myAsv*"**. The ' ***** ' will be replaced by ' **"** '.

- Multiple commands may be entered in the <**action**> parameter. Each command must be separated by a space.
  AT+EGMAC=4,"OUT1","AT+EGOUT=0,1,50 AT+EGOUT=1,1,10"

- Use the digital characters '0'-'9' in the <**name**> parameter for DTMF remote access.
  Example:
  AT+EGMAC=4,"123","AT+EGOUT=0,1,50”

- The <**name**> parameter must always be set (even if not required for a recognised incoming vocal call). Spaces and commas are not allowed.

- **IMPORTANT** : Multi-command macros containing the transmission of 1 or more SMSs must place the transmission of the SMSs in the last position (after the normal commands).

- **IMPORTANT** : Received SMSs containing macros and commands must place the macros and commands requesting the transmission of SMSs in the last position (after the normal commands).

2.1.13 +EGCGSM / +LOCCGSM – GSM start-up configuration commands

Description:

This command configures the AT commands that will be sent to the GSM when the GSM starts up and the SIM is ready ("+EGEVT: 2").

Syntax:

AT+EGCGSM=<n>,<cmd> (Config GSM)

Examples:

Command	Possible Responses	Notes
AT+EGCGSM=?	+EGCGSM: (1-10),"AT+COMMAND" OK	*Display syntax.*
AT+EGCGSM=2,"AT+CRLP=61,61,48,7"	OK	*Set the command 2*
AT+EGCGSM?	+EGCGSM: 1,"AT+URAT=1,2" +EGCGSM: 2,"AT+CRLP=61,61,48,7" +EGCGSM: 3,"AT+UDTMFD=1,2,4,400,14,2" OK	*Display the current configuration*
AT+EGCGSM=2	+EGCGSM: 2,"AT+CRLP=61,61,48,7" OK	*Display the current configuration for command 2*
AT+EGCGSM=2,""	OK	*Erase the command 2*

Defined values:

<n> Command number (1 – 10).
If <**n**> is "**RESET**" then all the GSM configuration commands will be cleared.
ATTENTION: this will clear the default values:

<cmd> "AT+command" (max size 30 characters).

Example :
AT+EGCGSM=2,"AT+CSMP=17,167,0,8"

Notes:

- It is not possible to enter ' **"** ' in the <**cmd**> parameter. The ' **"** ' must be entered as ' ***** '. Example: **AT+EGCGSM=1,"AT+CSCS=*UCS2*"**. The ' ***** ' will be replaced by ' **"** '.
- Commands must begin with "**AT**" and can be in upper or lower case.
- By default the GSM is forced to start up in 3G mode. The 2G or 3G modes may be forced by ensuring that the command AT+URAT is set in the first GSM startup configuration position as follows:

  3G mode: **AT+EGCGSM=0,"AT+URAT=1,2"**
  2G mode: **AT+EGCGSM=0,"AT+URAT=0,0"**

- Default values:

  +EGCGSM: 1,"AT+URAT=1,2"
  +EGCGSM: 2,"AT+CRLP=61,61,48,7"
  +EGCGSM: 2,"AT+UDTMFD=1,2,4,400,14,2"

2.1.14 +EGLOP / +LOCLOP – Low-Power mode

Description:

This command allows the Low-Power mode to be configured.
If activated, the unit will enter the Low-Power mode when the input 1 (APC input) becomes inactive. The unit will then wake up when the input 1 (APC input) becomes active (see below).

Syntax:

AT+EGLOP=<mode>,<delay>

Examples :

Command	Possible Responses	Notes
AT+EGLOP=?	+EGLOP: (0-1),(1-600) OK	*Display syntax*
AT+EGLOP=1	 OK	*Set parameter*
AT+EGLOP?	+EGLOP: 1,10 OK	*Display current configuration*

Defined values:

<**mode**> 0: Low-Power mode disabled (default).
1: Enabled.

<**delay**> Delay before entering Low-Power mode after input 1 (APC input) becomes inactive (1 – 600 seconds, default 10 seconds).

Notes:

When the unit enters the Low-Power mode, the GSM is in a low-power mode whilst the V24 serial interface is turned off. The ARM processor continues to function but at a reduced clock rate and most of the core functions are idle. Power consumption is reduced to a minimum.
The ARM is woken up by detecting an event on the input 1 (APC input), a RING from the GSM, a character from the V24 serial interface or by an internal timer.

The delay can be useful to ensure that the last frame is sent to the remote server before entering the Low-Power mode.

When enabled, the Low-Power mode will be entered when **all** of the following conditions are met:

- Input 1 (APC input) is in its rest state (either OPEN or CLOSED. See chapter **2.1.2 +EGINP / +LOCINP – Inputs configuration**).
- No SMSs are pending.
- Remote SMS configuration is not in progress.
- SNTP is not in progress.
- Not waiting for a KEEP_ALIVE frame after the previous wake-up from Low-Power.
- DOTA is not in progress.
- GSM call is not in progress.

When all of the above conditions have been met, any remaining TCP connection is terminated and the Low-Power mode is then entered.

The unit will then wake up when **either** :

- the input 1 (APC input) becomes active (different to its rest state),
- or if **AT+EGKAS** is enabled and the timeout expires,
- or the RING from the GSM is active (incoming call or received SMS),
- or a character from the V24 serial interface is received.

Notes:

- The Low-Power mode does not affect the battery charging.

2.1.15 +EGTIMCTR / +LOCTIMCTR – Time counter

Description:

This command will configure the time counter for each digital input. The time counters are incremented with a resolution of 1 minute when the selected digital inputs are active. Digital inputs may be selected for this purpose with the command **AT+EGINP**. See chapter **2.1.2 +EGINP / +LOCINP – Inputs configuration** for details.
Over threshold actions include SMS alarm, Datalogger, etc.

Syntax:

AT+EGTIMCTR=<n>,<enable>,<action>,<log>,<threshold>,<accValue><mins> (case1: Enable, threshold…)
AT+EGTIMCTR=<n>,<"M">,<"msg">,<id> (case2: Message)
AT+EGTIMCTR=<n>,<"P">,<"phoneList"> (case3: Phone list)

Examples:

Command	Possible Responses	Notes
AT+EGTIMCTR=?	+EGTIMCTR: ("I1"-"I5"),(0-1),(0-1),(0-1),(0-71582788),(0-71582788),(0-1) +EGTIMCTR: ("I1"-"I5"),("M"),"Message",(0-1) +EGTIMCTR: ("I1"-"I5"),("P"),"Phone index" OK	*Display syntax*
AT+EGTIMCTR?	+EGTIMCTR: I1,0,0,0,0,0,0 +EGTIMCTR: I1,"M","INPUT 1 Total time: %U hours",0 +EGTIMCTR: I1,"P" +EGTIMCTR: I2,0,0,0,0,0,0 +EGTIMCTR: I2,"M","INPUT 2 Total time: %V hours",0 +EGTIMCTR: I2,"P" +EGTIMCTR: I3,0,0,0,0,0,0 +EGTIMCTR: I3,"M","INPUT 3 Total time: %W hours",0 +EGTIMCTR: I3,"P" +EGTIMCTR: I4,0,0,0,0,0,0 +EGTIMCTR: I4,"M","INPUT 4 Total time: %X hours",0 +EGTIMCTR: I4,"P" +EGTIMCTR: I5,0,0,0,0,0,0 +EGTIMCTR: I5,"M","INPUT 5 Total time: %Y hours",0 +EGTIMCTR: I5,"P" OK	*Display current configuration*
AT+EGTIMCTR="I1",1,1,1,2100,1500,0	OK	*Set Enable, threshold and accumulated configuration*
AT+EGTIMCTR="I1","M","date:%d-%t, my counter = %T",1	OK	*Set SMS message with added ID*
AT+EGTIMCTR="I1","P","3"	OK	*Set telephone list*
AT+EGTIMCTR	+EGTIMCTR: 1,510,1500,2100 +EGTIMCTR: 2,0,0,0 +EGTIMCTR: 3,0,0,0 +EGTIMCTR: 4,0,0,0 +EGTIMCTR: 5,0,0,0 OK	*Display current, threshold and accumulated values*

Defined values:

<**n**> "**In**" or '**n**' only for logic input, n=1 to 3 for GenPro x25e (1 to 5 on GenPro x54e).

Case 1 :

<**enable**> Action activation
0 - No action but the accumulated value is managed and its status can be added to the frame (default).
1 - The status change of the accumulated value activates an action.

<**action**> **0** - no action (default).
1 - send an SMS containing the text message defined below.

<**log**> **0** - no logging (default).
1 - store a frame with the new status and parameters as defined in **AT+EGFRT**.

<**threshold**> Threshold value, max = 71582788, (default = 0).

<**accValue**> Accumulated value, max = 71582788, (default = 0). Note that this may be set if is required to have a starting value.

<**mins**> **0** - Threshold and accumulated values are in hours (default).
1 - Threshold and accumulated values are in minutes.

Case 2 :

<**"M"**> Specifies the message included in the SMS, maximum length 160 characters.

<**"msg"**> The message included in the SMS, maximum length 160 characters.
Default message: **"Input n Total time: %U hours"** where "**n**" is the input number, "**%U**" – "**%Y**" is the accumulated value for the input. See chapter **3.2.1 +EGFRT / +LOCFRT – Frame format** for all possible dynamic values.

<**id**> **0** - the identification string is not added.
1 - the identification string is added (default), (**AT+EGIDT**).

Case 3 :

<**"P"**> Specifies the list of phone indexes.

<**"phoneList"**> Phone indexes affected to this function. The phone indexes must be separated by the comma and with a maximum of 13 indexes.
The phone indexes may be entered as individual index values or as ranges,
e.g.: **AT+EGTIMCTR="I1","P",3,24,"31-40",50,"60-70"**.
Use **AT+EGPHN** to enter the corresponding phone number. If <**"phoneList"**> is "**RESET**" then the list of associated phone indexes will be erased.

Notes:

- Time count resolution is 1 minute. When the selected digital inputs are active then the associated internal current and accumulated counter values are incremented and saved to non-volatile memory every minute.

- The command **AT+EGTIMCTR** will display the following values in either completed hours or minutes as specified by the <**mins**> parameter:
  +EGTIMCTR: input,current,threshold,accumulated

  where:
  input: is the digital input number.
  current: is the current internal counter value. It is automatically set to the accumulated modulo threshold value. When it reaches the threshold value it will be reset to 0 and the alarm is triggered.
  threshold: is the threshold value.
  accumulated: is the accumulated time value.

- If either the <**threshold**> or <**accValue**> or <**mins**> parameters are specified then the current internal counter value will be set to the accumulated modulo threshold value.

2.1.16 +EGPPWO / +LOCPWO – External power-out control

Description :

This command will configure the external power-out signal on the Genxxx x5xe.

Command syntax :

AT+EGPWO=<state>,<save>

Command	Possible Responses	Notes
AT+EGPWO=?	+EGPWO: (0-1),(0-1) OK	*Display syntax.*
AT+EGPWO?	+EGPWO: 0,0 OK	*Display current value.*
AT+EGPWO=1	OK	*Enable power-out.*
AT+EGPWO=1,1	OK	*Enable power-out and save its state.*
AT+EGPWO?	+EGPWO: 1,1 OK	*Display current value.*

Defined values :

<**state**>

0: External power-out disabled (default).
1: External power-out enabled.

<**save**>

0: State not saved, always disabled after a reset (default).
1: Current state is saved and pin is set to this state after a reset.

Notes:

This command is available only on the Genxxx x5xe:

2.1.17 +EGCUA / +LOCCUA – UART capture configuration

Description:

This command will configure the format of the "CU" field in the frame when using the +EGFRT=3,"CU" frame format option to capture data from the main UART (UART0 on a Genxxx x5xe).

Syntax:

AT+EGCUA=<n>[,<termType>][,<char>][,<options>]

Examples:

Command	Possible responses	Notes
AT+EGCUA=?	+EGCUA: (0,3-150),(0-6),(0-255),(0-255) OK	*Display syntax*
AT+EGCUA=21,3,13,128	OK	*Set required number of characters and logging*
AT+EGCUA?	+EGCUA: 21,3,13,128 OK	*Display current configuration*

Defined values:

<n> Number of characters including terminating character if required (default 11).
If **<n>** is zero then the function is disabled and the V24 FCM will not be opened even if the SIM is inserted.

<termType> Termination type (default 3).
0 : no termination character required, just the correct number of characters.
1 : <CR> only
2 : <LF> only
3 : <CR> or <LF>
4 : <CR> and <LF>
5 : use the specific ASCII character defined by **<char>** below.
6 : variable length data up to maximum specified length with the specific terminating ASCII character defined by **<char>** below.

<char> Decimal value of the specific ASCII character (default 13, corresponds to <CR>).

<options>

Options bit-mask:

1 : 0: do not wait for SIM insertion; 1: wait for SIM insertion before opening the FCM (default).
2 : -
4 : -
8 : -
16 : -
32 : -
64 : -
128 : 0: no logging (default); 1 log frame with captured UART

Note:

The inter-character timeout is 2 seconds. If no characters are received during this time, an incomplete capture buffer will be emptied.

In **<termType> 6**, the captured dated may be of variable length and terminated with the terminating ASCII character defined by **<char>**. If the maximum specified length is reached before the terminating character is detected and the timeout is respected then the frame will be sent. If the maximum specified length is exceeded then the frame is discarded.
The terminating characters are not added to the frame.

2.1.18 +EGINPU / +LOCINPU – UART capture match configuration

Description:

If the +EGFRT=3,"CU" frame format option has been configured to capture data from the main UART as specified by the +EGCUA command, then this command may be used to configure a matching text to search for in the captured data. An offset may be specified from which to start the search in the captured data. If a match is found then the event may be logged and an SMS be sent.

Syntax:

AT+EGINPU=<n>,<o>,<t>,<x>,<z>,<l> (case1 : INput Uart match configuration)
AT+EGINPU=<n>,<o>,<t>,<x> (case2 : INput Uart match SMS Messages)
AT+EGINPU=<n>,<o>,<t> (case3 : INput Uart match Phones list)

Examples:

Command	Possible Responses	Notes
AT+EGINPU=?	+EGINPU: ("U1"-"U4"),(0-1),(0-151),("Text to find"),(0-3),(0-1) +EGINPU: ("U1"-"U4"),("M"),"SMS message",(0-1) +EGINPU: ("U1"-"U4"),("P"),"Phone index"	*Display syntax*
AT+EGINPU="U1",1,5,"789",1,1 AT+EGINPU="U1","M","[%i] Found text 1: %u",0 AT+EGINPU="U1","P","1"		*Configuration match 1*
AT+EGINPU="U2",1,3,"ABC",1,1 AT+EGINPU="U2","M","[%i] Found text 2: %u",0 AT+EGINPU="U2","P","1"		*Configuration match 2*
AT+EGINPU?	+EGINPU: U1,0,5,"789",1,1 +EGINPU: U1,"M","[%i] Found text 1: %u",0 +EGINPU: U1,"P",1 +EGINPU: U2,1,3,"ABC",1,1 +EGINPU: U2,"M","[%i] Found text 2: %u",0 +EGINPU: U2,"P",1 +EGINPU: U3,0,0,"",0,0 +EGINPU: U3,"M","Found text 3",1 +EGINPU: U3,"P" +EGINPU: U4,0,0,"",0,0 +EGINPU: U4,"M","Found text 4",1 +EGINPU: U4,"P"	*Display current configuration*

<n> "**Un**" or '**n**'. Match index, n=1 to 4.

Case 1 :

<o> Input action activation
0 – Disabled (default).
1 – Enabled.

<t> Offset in captured UART data from which to start the search, 0 to 151), (default = 0).

<x> Text string to find in captured UART data.

<z>
0 – no action (default).
1 – send an SMS containing the text message defined below.
2 – reserved.
3 – trigger a local reset of the modem.

<l>
0 – no logging (default).
1 – store a frame with the new status and parameters as defined in AT+EGFRT.

Case 2 :

<o> is "**M**".

The messages may also include %xx variables (see chapter **4.2.3 +EGTPH / +LOCTPH – Custom frame format**).

<t> Message included in the SMS, maximum length 160 characters. Default: "**Found `text n`**".

<x> **0** - the identification string is not added.
1 - the identification string is added (AT+EGIDT), (default).

Case 3 :

<o> is "**P**" to configure the list of the phone indexes.

<t> Phone indexes affected to this input. The phone indexes must be filled with the comma separator and with a maximum of 13 indexes.
The phone indexes may be entered as individual index values or as ranges,
e.g.: AT+EGINP=1,"P",3,24,"31-40",50,"60-70".

Use AT+EGPHN to enter the corresponding phone number.

3 DATALOGGER MANAGEMENT

3.1 Description

The Datalogger function provides cyclic recording of records and events in custom definable frames.
The frames are recorded in Flash memory in a circular buffer which ensures several thousands of records (the exact number depends on the selected frame format).
The frames stored may be sent via IP, SMTP or SMS, (or several SMSs depending on the size of data to be sent).
This information is sent to the destination after an interval or at a fixed time.

3.2 FRAME FORMAT

Description:
The frame format sent by the product is :
$GPLOC,field1,field2,…*CK

Note:
The checksum "CK" is the exclusive-OR of all the characters between the leading '$' and the trailing '*'.

3.2.1 +EGFRT / +LOCFRT – Frame format

Description:
This command will configure the data format and to select the fields to be present in the frame.

If the format is changed, all data previously recorded will be automatically erased. This is due to the optimization of the logged data which does not allow the change from one format to another without loss of information.

Syntax:
AT+EGFRT=<format>[,a,b,..]

Defined values:

<**format**>	Frame format =3
<**a,b,...**>	Field parameters defined by the user. May be entered in any order, but they will always appear in the order shown in the table below.

With format = 3, the optional field parameters determine the selected fields.
Other <**format**> values reserved.

The optional field parameters are:

Name	Dynamic parameter	Description	Values	Number of bytes used in flash
ID	%i	Identifier (see chapter **2.1.11 +EGIDT / +LOCIDT – Identifier**)		0
TS[1]	%s	Timestamp (UTC or Local Time)	Seconds	4
TM	%t	Time (UTC or Local Time)	HHMMSS.00	-
IP	%p	Inputs states	$I_8I_7I_6I_5I_4I_3I_2I_1$	1
IP1	%J	Input state 1	0 - 1	-
IP2	%K	Input state 2	0 - 1	-
IP3	%L	Input state 3	0 - 1	-
IP4	%M	Input state 4	0 - 1	-
IP5	%N	Input state 5	0 - 1	-
CU[2]	%u	Capture UART	See description below	Variable length
OW	%w	One-Wire iButton serial number (future development)	000000000000 - 0000xxxxxxxx	12
AA[3]	%m	Analog input states	wxyz	1
AA0	%0	Analog input 0 state	w	-
AA1	%1	Analog input 1 state	x	-
AA2	%2	Analog input 2 state	y	-
AA3	%3	Analog input 3 state	z	-
AN[4]	%b	Analog input levels	0000000000000000 - 9999999999999999	4 x n inputs
AN0[5]	%6	Analog input 0 level	Floating point	-
AN1[5]	%7	Analog input 1 level	Floating point	-
AN2[5]	%8	Analog input 2 level	Floating point	-
AN3[5]	%9	Analog input 3 level	Floating point	-
PC[6]	%z	Pulse counters all inputs	00.00.00.00.00 - FFFFFFFF.FFFFFFFF. FFFFFFFF.FFFFFFFF. FFFFFFFF	4 x n inputs
PC1[7]	%B	Pulse counter 1	00 - FFFFFFFF	-
PC2[7]	%C	Pulse counter 2	00 - FFFFFFFF	-
PC3[7]	%D	Pulse counter 3	00 - FFFFFFFF	-
PC4[7]	%E	Pulse counter 4	00 - FFFFFFFF	-
PC5[7]	%F	Pulse counter 5	00 - FFFFFFFF	-
TC[8]	%T	Accumulated time values all inputs	0.0.0.0.0 - 4294967295.4294967295. 4294967295.4294967295. 4294967295	4 x n inputs
TC1[8]	%U	Accumulated time value input 1	0 - 4294967295	4
TC2[8]	%V	Accumulated time value input 2	0 - 4294967295	4
TC3[8]	%W	Accumulated time value input 3	0 - 4294967295	4
TC4[8]	%X	Accumulated time value input 4	0 - 4294967295	4
TC5[8]	%Y	Accumulated time value input 5	0 - 4294967295	4
IM	%j	IMEI Indicator	Always the GSM IMEI code	0
LC[9]	%r	Logging code	See below	1
DT	%d	Date	DDMMYY	-

Notes:

[1] Timestamp:

The number of seconds that have elapsed since 00h00m00s Thursday 1 January 1970 not counting leap seconds.

[2] Capture UART:

The CU parameter allows data from the main UART (UART0 on a Genxxx x5xe) to be captured and sent in the frame. See chapter **2.1.17 +EGCUA / +LOCCUA – UART capture configuration.**

[3] The four analog channel alert levels are concatenated as:
wxyz
where:
wxyz is the alert level for each channel, **w** for ch0, **x** for ch1, etc. The values are **H**igh, **N**ormal or **L**ow.

[4] The four analog channel voltages are in mV and are concatenated as:
aaaabbbbccccdddd

where:
aaaa is the value for channel 0 (External supply voltage for GenPro 25)
bbbb is the value for channel 1 (ANA1 on In2 for GenPro x25e; ANA1 for GenPro x54e)
cccc is the value for channel 2 (external supply voltage or ANA2 on SPK2N for GenPro x25e, ANA2 or external supply voltage for GenPro x54e)
dddd is the value for channel 3 (internal battery supply voltage)
The range for each channel is from 0000 mV to 9999 mV.
If the “divide by 10” option is enabled then the range for each channel is from 00000 mV to 99990 mV but displayed as 0000 to 9999.

[5] The individual analog channel voltages are inserted in to the frame.
The format of the data in these fields may be configured with the command **AT+EGANAS**. (See chapter **2.1.4 +EGANAS / +LOCANAS – Analog inputs scaling**).
Example: If the command **AT+EGANAS=0,"0","0","1000","0","3"," Volts"** is configured, then format option "**A0**" will insert the input voltage read by channel 0 as "**11.043 Volts**".

[6] The pulse value can be added for one or all inputs. It depends on the input configuration (AT+EGINP).
If the management type is 'P' the pulse converted (AT+EGINC) values are added.
The values are coded in hexadecimal up to a maximum value of FFFFFFFF:
Values from 0 to 255 are encoded as 00 to FF,
Values from 256 to 65535 are encoded as 0100 to FFFF,
Values equal or greater than 65536 are encoded as 10000 to FFFFFFFF.
Values may also be shown in decimal if the option in **AT+EGINC** command is selected.

Examples:
A decimal value of 12 will be encoded as: 0C.
A decimal value of 107 will be encoded as: 6B.
A decimal value of 356 will be encoded as: 0124.
A decimal value of 99841553 will be encoded as: 05F37611.

aaaaaaaa.bbbbbbbb.cccccccc (max field length for GenPro xx25e)
aaaaaaaa.bbbbbbbb.cccccccc.dddddddd.eeeeeeee (max field length for GenPro x54e)

where:
aaaaaaaa is the counter value for input 0
bbbbbbbb is the counter value for input 1
cccccccc is the counter value for input 2
etc.
A dot (**.**) is used as separator between each counter value when displaying all values.
Counter values are saved in flash memory.

[7] The individual pulse values can be added to the frame with the same format as shown above.

[8] The accumulated time counter values from 0 to 4294967295 are shown in hours or minutes as specified by the <**mins**> parameter in the command **AT+EGTIMCTR**.
A dot (**.**) is used as separator between each counter value when displaying all values.
Counter values are saved in flash memory.

[9]Logging code (hexadecimal)	Description
	RESET INFORMATION
01	Daily reset
08	Reset after no ACK
09	Reset after invalid IP address
	STORE INFORMATION
10	Cyclic
11	Keep Alive
12	Manual Store (AT+EGSTK <CR>)
14	Keep live SMS
	TIME COUNTER INFORMATION
18	Accumulated time counter input 1 reached threshold
to	Inputs : (1 to 3 for GenPro x25e; 1 to 5 for GenPro x54e)
1C	Accumulated time counter input 5 reached threshold
	LOGIC INPUTS INFORMATION
21	Input 1
to	Inputs : (1 to 3 for GenPro x25e; 1 to 5 for GenPro x54e)
25	Input 5
	ANALOG INPUTS INFORMATION
2A	ANA 1
to	
2D	ANA 4
	UART INFORMATION
48	UART capture MATCH 1
to	
47	UART capture MATCH 8
51	UART Capture

Adding the state of the inputs with the parameter "**IP**" has the following consequences:

- The inputs are automatically configured with the following values (for a GenPro x25e) :

  +EGINP: I1,1,50,"O","D",1,0
  +EGINP: I2,1,50,"O","D",1,0
  +EGINP: I3,1,50,"O","D",1,0

  i.e 500 ms of integration time and double state transmitted.

- When the status of an input changes, a frame is automatically recorded and the capture interval is deferred by as much.

Below is shown the organization of the values for a GenPro x25e in a frame with the command **AT+EGFRT=3,"IP"** only:

$GPLOC,000*CK
Input 2┘ │ └Input 0
Input 1

The acquisition must be stopped before changing or modifying the data format (**AT+EGSTK=0**).

The command **AT+EGFRT=3,1** will completely erase the memory zone of the Datalogger information.

The command **AT+EGFRT** will show the parameters list with the custom format. See chapter **4.2.3 +EGTPH / +LOCTPH –** for more details.

Examples:

Command	Possible responses	Notes
AT+EGFRT=?	+EGFRT: (3),("ID","TS","TM","IP","IP1","IP2","IP3","IP4","IP5","CU","OW","AA","AA0","AA1","AA2","AA3","AN","AN0","AN1","AN2","AN3","PC","PC1","PC2","PC3","PC4","PC5","TC","TC1","TC2","TC3","TC4","TC5","IM","LC","DT") OK	*Display syntax*
AT+EGFRT=3,"ID","DT","TM","IP"	OK	*Enter configuration*
AT+EGFRT?	+EGFRT: 3,"ID","TM","IP","DT" OK	*Display the current configuration*
AT+EGFRT	$GPLOC,%i,%t,%p,%d*	*Display the current dynamic parameter*
AT+EGFRT=3,1	clear history OK	*Clear the circular buffer containing all the stored frames.*

DEFAULT VALUE :

+EGFRT: 3,"ID","TM","IP","AA","AN","LC","DT"

3.2.2 +EGFRTX / +LOCFRTX – Extended frame format

Description:

The command **AT+EGFRT** only allows a maximum 15 parameters to specified after the '=' (format and field parameters). After the frame format has been specified (3) as well as the first 14 field parameters, then this command will allow extra field parameters to be specified.

Syntax:

AT+EGFRTX=<format>[,a,b,..]

Defined values:

<format> frame format, 3 (user format). This must be the same as the format specified with the command **AT+EGFRT**.

<a,b,...> extended user format defined by the user (see table of field parameters above).

Command	Possible responses	Notes
AT+EGFRT=3,"ID","TS","TM","IP","IP1","IP2","IP3","IP4","IP5","AA","AA0","AA1","AA2","AA3"	0K	*Enter basic configuration*
AT+EGFRTX=3,"AN","AN0","AN1","AN2","AN3","PC","PC1","PC2","PC3","PC4","PC5","TC","TC1","TC2"	0K	*Enter extended configuration*
AT+EGFRTX=3,"TC3","TC4","TC5","IM","LC","DT"	0K	*Enter extended configuration*
AT+EGFRT? +EGFRT: 3,"ID","TS","TM","IP","IP1","IP2","IP3","IP4","IP5","AA","AA0","AA1","AA2","AA3","AN","AN0","AN1","AN2","AN3","PC","PC1","PC2","PC3","PC4","PC5","TC","TC1","TC2","TC3","TC4","TC5","IM","LC","DT"	0K	*Display current configuration*

Notes:

Only the command **AT+EGFRT** will modify the **<format>**.

If fewer parameters are to be specified when re-entering **AT+EGFRTX**, then the basic parameters must again be re-entered with the command **AT+EGFRT** to reset the complete frame format.

3.2.3 +EGFRTDT / +LOCFRTDT – Date / Time format

Description:

This command will specify the format for the date and time information in the logged frame.

Syntax:

AT+EGFRTDT=<Dorder>,<Dadd2k>,<Dmonth>,<Dday>,<Dsep>,<Tsecs>,<Th12>,<Tsep>

Examples:

Command	Possible responses	Notes
AT+EGFRTDT=?	`+EGFRTDT: (0-5),(0-1),(0-2),(0-1),(0-3),(0-1),(0-1),(0-1)` OK	*Display syntax*
AT+EGFRTDT?	`+EGFRTDT: 0,0,0,0,0,0,0,0` OK	*Display current configuration (default shown here)*
AT+EGFRTDT=0,1,2,1,3,1,0,1	OK	*Date: "22 Nov 2016"* *Time: "17:16:09"*
AT+EGFRTDT?	`+EGFRTDT: 0,1,2,1,3,1,0,1` OK	*Display current configuration*

Defined values:

<Dorder> Date order:
- 0 : DMY (default)
- 1 : DYM
- 2 : MDY
- 3 : MYD
- 4 : YMD
- 5 : YMD

<Dadd2k> Add 2000 to year:
- 0 : no add (default)
- 1 : add 2000 to year

<Dmonth> Date month format:
- 0 : two-digit month, e.g. 04 (default)
- 1 : one-digit month for months below 10, e.g. 4
- 2 : three-letter abbreviation for month, e.g. Apr
- 3 : month spelled out in full, e.g. April

<Dday> Date day format:
- 0 : two-digit day, e.g. 02 (default)
- 1 : one-digit day for days below 10, e.g. 2

<Dsep> Date separator:
- 0 : "" none (default)
- 1 : "**/**" slash
- 2 : "**-**" dashes
- 3 : " " spaces

<Tsec> Time seconds format:
- 0 : hhmmss.00 (default)
- 1 : hhmmss

<Th12> 24H / 12H:
- 0 : 24H (default), e.g. 16:53:27
- 1 : 12H, e.g. 04:53:27 PM

<Tsep> Time separator:
- 0 : "" none (default)
- 1 : "**:**" colon

3.3 +EGHTC / +LOCHTC – Recovering the recorded frames

Description:

This command displays the frames stored in the flash memory.

Syntax:

AT+EGHTC=<block>,<index>,<n> (HisToriC)
AT+EGHTC=<block>,<"BI"> (block information)

Examples:

Command	Possible Responses	Notes
AT+EGHTC=?	+EGHTC: (0-246),(0-507)("BI"),(1-508) OK	*Display syntax*
AT+EGHTC	$GPLOC,358683063120423,060129.00,00000,10,010104*5C $GPLOC,358683063120423,060130.00,00000,10,010104*54 $GPLOC,358683063120423,060131.00,00000,10,010104*55 $GPLOC,358683063120423,060132.00,00000,10,010104*56 $GPLOC,358683063120423,060133.00,00000,10,010104*57 ... $GPLOC,358683063120423,060938.00,00000,10,010104*54 $GPLOC,358683063120423,060939.00,00000,10,010104*55 $GPLOC,358683063120423,060940.00,00000,10,010104*5B $GPLOC,358683063120423,060941.00,00000,10,010104*5A $GPLOC,358683063120423,060942.00,00000,10,010104*59 $GPLOC,358683063120423,060943.00,00000,10,010104*58 $GPLOC,358683063120423,060944.00,00000,10,010104*5F OK	*Display all frames from all blocks starting at block 0*
AT+EGHTC=0	$GPLOC,358683063120423,060129.00,00000,10,010104*5C $GPLOC,358683063120423,060130.00,00000,10,010104*54 $GPLOC,358683063120423,060131.00,00000,10,010104*55 $GPLOC,358683063120423,060132.00,00000,10,010104*56 $GPLOC,358683063120423,060133.00,00000,10,010104*57 ... $GPLOC,358683063120423,060920.00,00000,10,010104*5D $GPLOC,358683063120423,060921.00,00000,10,010104*5C $GPLOC,358683063120423,060922.00,00000,10,010104*5F $GPLOC,358683063120423,060923.00,00000,10,010104*5E $GPLOC,358683063120423,060924.00,00000,10,010104*59 $GPLOC,358683063120423,060925.00,00000,10,010104*58 $GPLOC,358683063120423,060926.00,00000,10,010104*5B OK	*Display all frames from block 0*
AT+EGHTC=0,401	$GPLOC,358683063120423,060922.00,00000,10,010104*5F $GPLOC,358683063120423,060923.00,00000,10,010104*5E $GPLOC,358683063120423,060924.00,00000,10,010104*59 $GPLOC,358683063120423,060925.00,00000,10,010104*58 $GPLOC,358683063120423,060926.00,00000,10,010104*5B OK	*Display all frames from block 0 starting at index 401*
AT+EGHTC=0,401,2	$GPLOC,358683063120423,060922.00,00000,10,010104*5F $GPLOC,358683063120423,060923.00,00000,10,010104*5E OK	*Display 2 frames from block 0 starting at index 401*
AT+EGHTC=0,"BI"	+EGHTC: 0,406,4060 OK	*Display block information for block 0*
AT+EGHTC=1,"BI"	+EGHTC: 1,18,180 OK	*Display block information for block 1*

Defined values:

<block> Block number, 0 to 246. Default 0

<index> Index start position, 0 to 507. Default 0.

<n> Number of frames to display, 0 to 508. Default all frames.

<BI> Display block usage information: **+EGHTC: block,nframes,nbytes**

3.4 +EGHCLR / +LOCHCLR – Clear the recorded frames

Description:

This command will clear the registered frames by setting the read and write block and index values to 0 such that the command AT+EGHTC will not return any frames.
The frames may be re-accessed by setting the read-block to the appropriate value with the command AT+EGRDI.

Syntax:

AT+EGHCLR

Example:

Command	Possible Responses	Notes
AT+EGHCLR	OK	*Clear frames*

3.5 +EGRDI / +LOCRDI – Management of the read index in the flash memory

Description:

This command will display the current read/write blocks/indexes and set the read-block to a specific block value.

Syntax:

AT+EGCRDI=n (ReaD Index)

Examples:

Command	Possible Responses	Notes
AT+EGRDI=?	`+EGRDI: <0-246>` OK	*Display syntax*
AT+EGRDI?	`+EGRDI: read_block:0, read_idx:456, write_block:0, write_idx:456` OK	*Display current block and index values*
AT+EGRDI=0	OK	*Set the read block to "0" (the read index will be set to 0), in order to display all the stored frames (see AT+EGHTC)*
AT+EGRDI	OK	*Set the read block and index equal to the write block and index*

3.6 +EGSTK / +LOCSTK – Logging inputs events

Description:

This command will configure the cyclic storage of the data in the flash memory. Data is saved in the format specified by the AT+EGFRT command.

Syntax:

AT+EGSTK=<s>,<x>,<y> (**ST**oc**K**age)

Examples:

Command	Possible responses	Notes
AT+EGSTK=?	+EGSTK: (0-2),"HH:MM:SS",("I","H","C") OK	*Display syntax*
AT+EGSTK?	+EGSTK: 0,"00:01:00","I" OK	*Display current configuration (default shown here)*
AT+EGSTK=1,"000100"	OK	
AT+EGSTK	OK	*Manual storage a new frame*

Defined values:

<**s**> Logging management:
0 : no logging.
1 : permanent logging and at each change of status on the inputs(*****) or events.
2 : permanent logging **if** one of the digital inputs is activated **and** at each change of status on the digital inputs (*****) or events.

(*****) **if** parameter ″IP″ requested with the custom frame format (AT+EGFRT=3,…).

<**x**> Acquisition interval. Format "HHMMSS" (interval max = 240000 i.e. 24 hours).

<**y**> "I" : logging at regular time interval (default).
"H" : logging at a fixed time
"C" : logging at same minutes after the hour (see notes below).

Notes:

- The command **AT+EGSTK** with no parameters will force the storage of a new frame according to the selected format.

  DEFAULT VALUE :
  + EGSTK: 0,"00:01:00","I"

- If the parameter <**y**> is set to "**C**" then the time parameter <**x**> will only accept an hours value of 0, 1, 2, 3, 4, 6, 8 or 12. The logging time will then be at the same minutes after the specified cyclic hour time. Examples:
-

  If **AT+EGSTK=1,"00:10:00","C"** then log at 00:10, 00:20, 00:30 etc...
  If **AT+EGSTK=1,"01:10:00","C"** then log at 00:10, 01:10, 02:10 etc...
  If **AT+EGSTK=1,"02:15:00","C"** then log at 00:15, 02:15, 04:15 etc...
  If **AT+EGSTK=1,"06:15:00","C"** then log at 00:15, 06:15, 12:15 etc...

3.7 +EGSND / +LOCSND – Sending frame

Description:

This command allows to activate the sending of frames saved in the flash memory. Frames may be sent via SMS,TCP/UDP, FTP or SMTP at a regular interval or at a fixed time.

Syntax:

AT+EGSND=<x>,<y>,<z>,<apc><v24> (**SeND**)

Examples:

Command	Possible Responses	Notes
AT+EGSND=?	+EGSND: (0-6),("I","H","P","C"),("DD:HH:MM",00000),(0-1),(0-1) OK	*Display syntax*
AT+EGSND=1,"I","00:10"	OK	*Set parameters*
AT+EGSND?	+EGSND: 1,"I","0:00:10",0,0 OK	*Display current configuration*

Defined values:

<x> 0 : no transfer, function of recording only if logging active (default).

1 : Transfer via SMS :
In this case, one or several SMS (depending of the buffer size to send) is/are created at the defined interval time.
The content of the message depends on the format selected (see: AT+EGFRT command).
The SMS is sent **to all** the phone numbers which are allowed to send SMS (see: AT+EGPHN / <y> : bit 0=1)

2 : Transfer via TCP.
3 : Transfer via FTP.
4 : Reserved.
5: Transfer via SMTP.
6: Transfer via UDP.

<y> "I" : transfer at regular time interval (default).
"H" : transfer at a fixed time (every day or same day once every 7 days)
"P" : transfer with permanent connexion (mode TCP/ UDP only).
"C" : transfer at same minutes after the hour (see notes below).

<z>

"hh:mm" with :
hh = hour, mm = minutes,
"mm" with :
mm = minutes,
"dd:hh:mm" with :
dd = day(s), hh = hour, mm = minutes,

If **<y>** is "**I**" : dd = days (0 to 35), hh = hour, mm = minutes,
If **<y>** is "**H**" : dd = day (0 = every day, 1 = Monday…), hh = hour, mm = minutes,

transfer time / interval, (default = "0:00:10", every 10 seconds).

<apc> 0 : Disabled (default).
1 : Enabled. In +EGSND=2/6 modes only, the TCP/UDP connection will be stopped if the input 0 (APC) is inactive and will restart when active. Will only function when the **<v24>** option is active.

<**v24**> 0 : Disabled (default).
1 : Enabled. In +EGSND=2/6 modes only, data received on the serial link will be sent to the remote server and vice-versa. The commands will not be available in this mode. The SIM card must be removed to access the command set.

Notes:

- It is necessary to first set the command to AT+EGSND=0 before setting new parameters.
  Example :

```
AT+EGSND=0
OK

AT+EGSND=1,"I","00:10",0,0
OK
```

- If the parameter <**y**> is set to "**C**" then the time parameter <**z**> will only accept an hours value of 0, 1, 2, 3, 4, 6, 8 or 12. The send time will then be at the same minutes after the specified cyclic hour time. Examples:
  if **AT+EGSND=1,"C","00:10"** then send at 00:10, 00:20, 00:30 etc.
  if **AT+EGSND=1,"C","01:10"** then send at 00:10, 01:10, 02:10 etc.
  if **AT+EGSND=1,"C","02:15"** then send at 00:15, 02:15, 04:15 etc.
  if **AT+EGSND=1,"C","06:15"** then send at 00:15, 06:15, 12:15 etc.

- If the parameter <**y**> is not set to "**P**" then the parameters <**apc**> and <**v24**> will be forced to 0.

- If the parameter <**y**> is set to "**I**" then, if required, the interval may be over days : "**dd**:hh:mm".

- If the parameter <**y**> is set to "**H**" then, if required, the transmission of frames may be every day at the same time: "**0**:hh:mm" or the same day once a week: "**3**:hh:mm" (same time every Wednesday).

  dd = 0: same time every day
  dd = 1: same time every Monday
  dd = 2: same time every Tuesday
  dd = 3: same time every Wednesday
  dd = 4: same time every Thursday
  dd = 5: same time every Friday
  dd = 6: same time every Saturday
  dd = 7: same time every Sunday

3.8 Keep Alive configuration

3.8.1 +EGKAL / +LOCKAL – TCP Keep Alive

Description :

This command will configure the TCP Keep Alive function.
It is current practice for GPRS APN network operators to close all data transfer over the TCP link after an inactivity of more than about 30 minutes. The stop of the service is not notified to the relative layers of the IP stack. The result of this is that data then sent will not reach the server and will be lost.
This command will ensure that the service remains open by sending a frame after the specified period of inactivity.

Syntax :

AT+EGKAL=<state>[,<timeout>]

Command	Possible Responses	Notes
AT+EGKAL=?	+EGKAL: (0-1),(1-43200) OK	*Display syntax*
AT+EGKAL?	+EGKAL: 0,20 OK	*Display current configuration*
AT+EGKAL=1	OK	*Enable Keep Alive*
AT+EGKAL?	+EGKAL: 1,20 OK	*Display current configuration*
AT+EGKAL=1,1	OK	*Enable Keep Alive with new timeout value.*
AT+EGKAL?	+EGKAL: 1,30 OK	*Display current configuration*

Defined values :

<state>

0: Disabled (default).
1: Enabled.

<timeout>

Timeout (1 to 43200 minutes, default = 20 minutes).

3.8.2 +EGKASMS / +LOCKASMS – SMS Keep Alive

Description :

This command will configure the SMS Keep Alive function.
If no log frames have been sent for the specified time, then an SMS will be sent indicating that the module is still active.

Syntax :

AT+EGKASMS=<mode>[,<PhoneIndex>][,<timeout>][,<"text">]

Command	Possible Responses	Notes
AT+EGKASMS=?	`+EGKASMS: (0-2),(1-300),(1-8760),("text")` OK	*Display syntax*
AT+EGKASMS?	`+EGKASMS: 0,1,24,"%i: KEEP-ALIVE"` OK	*Display current configuration*
AT+EGKASMS=1	OK	*Enable Keep Alive SMS with Phone Index 1*
AT+EGKASMS?	`+EGKASMS: 1,1,24,"%i: KEEP-ALIVE"` OK	*Display current configuration*

Defined values :

<mode>
0: Disabled (default).
1: Enabled, no log.
2: Enabled, with log.

<PhoneIndex>
Telephone number index (1-300, default = 1).

<timeout>
Timeout (1 to 8760 hours, default = 24 hours).

<text>
SMS text string. May use %xx variables.
(Maximum 160 characters, default = "%i KEEP-ALIVE").

Notes:

- The <**mode**> parameter may be set to 2 if a log is required when the Keep Alive SMS is sent. The logged frame will be as specified with the **AT+EGFRT** command.
- The <**text**> string may contain %xx variables as used with the **AT+EGTPH** command. (See chapter **4.2.3 +EGTPH / +LOCTPH – Custom frame format** for available variables.)
- The <**PhoneIndex**> parameter indicates the phone number to be used. This phone number must be configured with the **AT+EGPHN** command.

3.8.3 +EGKAS / +LOCKAS – Keep Alive in Low-Power mode

Description :

This command will configure the unit to wake up from the Low-Power mode and save a frame. If the logging code option is selected with the AT+EGFRT command then the logging code will be KEEP_ALIVE.

Command syntax :

AT+EGKAS=<mode>[,<timeout>][,0][,<timeout_GSM>]

Command	Possible Responses	Notes
AT+EGKAS=?	`+EGKAS: (0-1),(1-43200),(0-300),(0-300)` OK	*Display syntax*
AT+EGKAS=1	OK	*Enable wakeup and save frame*
AT+EGKAS?	`+EGKAS: 1,1440,0,150` OK.	*Display current configuration*
AT+EGKAS=1,60,0,120	OK	*Enable wakeup with new timeout value*
AT+EGKAS?	`+EGKAS: 1,60,0,120` OK	*Display current configuration*

Defined values :

<mode>

0: Disabled (default).
1: Enabled.

<timeout>

Timeout (1 to 43200 minutes, default = 1440 minutes).
This value specifies the maximum time to stay in the Low-Power mode before waking up and saving a frame.

<timeout_GSM>

Timeout (0 to 300 seconds, default = 150).
If a non-zero value then after having woken up, will wait for valid GSM attachment before saving a frame. If zero or the timeout is exceeded then a frame will be saved regardless of GSM status.

Notes :

- The daily reset configured by AT+EGRST is not managed when then the unit is in the Low-Power mode.
- The third parameter is not used and may be set to 0.

4 NETWORK CONFIGURATION

4.1 GPRS configuration

4.1.1 +EGASV / +LOCASV – Access Point Server Name

Description:

This command allows to enter all the parameters given by the GSM operator for the GPRS access :

- The "**A**ccess point **S**er**V**er name"
- The "**A**ccess point **U**ser**N**ame"
- The "**A**ccess point **P**ass**W**ord"

Syntax:

AT+EGASV=<"ServerString1">,<"UserName1">,<"PassWord1">,<"ServerString2">,<"UserName2">,<"PassWord2">

Examples :

Command	Possible Responses	Notes
AT+EGASV=?	+EGASV: "ServerName","UserName","Password" OK	*Display syntax*
AT+EGASV="internet","user","pass"	OK	*Set parameters*
AT+EGASV?	+EGASV: "internet","user","pass" OK	*Display current configuration*
AT+EGASV="","",""	OK	*Erase the parameters*

Defined values:

<**Servername1**> Access point server name. Maximum 100 characters.
<**UserName1**> Access point user name. Maximum 50 characters.
<**PassWord1**> Access point password (case sensitive). Maximum 50 characters.

For second SIM if present:

<**Servername2**> Access point server name. Maximum 100 characters.
<**UserName2**> Access point user name. Maximum 50 characters.
<**PassWord2**> Access point password (case sensitive). Maximum 50 characters.

4.1.2 +EGAUN / +LOCAUN – Access Point User Name

Description:

This command allows to enter the **A**ccess Point Name **U**ser**N**ame, given by the GSM operator for the GPRS access.

Syntax:

AT+EGAUN=<"UserName1">,<"UserName2"> (Access point UserName)

Examples :

Command	Possible Responses	Notes
AT+EGAUN=?	+EGAUN: "UserName" OK	*Display syntax*
AT+EGAUN="user"	OK	*Set parameter*
AT+EGAUN?	+EGAUN: "user" OK	*Display current configuration*
AT+EGAUN=""	OK	*Erase the parameter*

Defined values:

<**UserName1**> Point name access. Maximum 50 characters.

<**UserName2**> Point name access. Maximum 50 characters. (For second SIM if present)

+EGAPW / +LOCAPW – Access Point Password

Description:

This command allows to enter the **A**ccess Point Name **P**ass**W**ord, given by the GSM operator for the GPRS access.

Syntax:

AT+EGAPW=<"PassWord1">,<"PassWord2"> (Access point PassWord)

Examples :

Command	Possible Responses	Notes
AT+EGAPW=?	+EGAPW: "Password" OK	*Display syntax*
AT+EGAPW="pass"	OK	*Set parameter*
AT+EGAPW?	+EGAPW: "pass" OK	*Display current configuration*
AT+EGAPW=""	OK	*Erase the parameter*

Defined values:

<**PassWord1**> Access point password. Maximum 50 characters (case sensitive).

<**PassWord2**> Access point password. Maximum 50 characters (case sensitive). (For second SIM if present)

4.2 TCP / UDP configuration

4.2.1 +EGTSV / +LOCTSV – TCP IP address and port number

Description:

This command allows to enter the IP address of the remote "**T**CP **S**er**V**er" distant and the value of the "**T**CP **P**or**T**".

Syntax:

AT+EGTSV=<"addr">[,<port>]

Examples :

Command	Possible Responses	Notes
AT+EGTSV=?	+EGTSV: "xxx.xxx.xxx.xxx",(0-65535) OK	*Display syntax*
AT+EGTSV= "123.98.76.54",1234	OK	*Set parameter*
AT+EGTSV?	+EGTSV: "123.98.76.54", 1234 OK	*Display current configuration*
AT+EGTSV=,0	OK	*Erase the parameter*

Defined values:

<**addr**> IP address of the remote TCP server ("xxx.xxx.xxx.xxx" or www.tcpserver.com"). Maximum 100 characters.

<**port**> Port number (1 to 65535).

4.2.2 +EGTPT / +LOCTPT – TCP port number

Description:

This command allows to enter the value of the "**T**CP **P**or**T**".

Syntax:

AT+EGTPT=<port>

Examples :

Command	Possible Responses	Notes
AT+EGTPT=?	+EGTPT: (1-65535) OK	*Display syntax*
AT+EGTPT=1234	 OK	*Set parameter*
AT+EGTPT?	+EGTPT: 1234 OK	*Display current configuration*

Defined values:

<**port**> Port number (1 to 65535).

4.2.3 +EGTPH / +LOCTPH – Custom frame format

Description:

This command will allow the transmitted frame to be completely customised. It may include text and logging variables to create a readable message.

Syntax:

AT+EGTPH=<"str">,<"aux">

Examples :

Command	Possible Responses	Notes
AT+EGTPH=?	+EGTPH: "\PATH=",(0-H) OK	*Display syntax*
AT+EGTPH="This frame was recorded at: %d-%t\\r\\n Identifier:%i\\r\\n Inputs: %p\\r\\n LogCode: %r\\r\\n Analog 1: %1\\r\\n Analog 2: %2\\r\\n\\r\\n","H"	 OK	*Set parameter*
AT+EGTPH?	+LOCTPH: "This frame was recorded at: %d-%t\\r\\n Identifier:%i\\r\\n Inputs: %p\\r\\n LogCode: %r\\r\\n Analog 1: %1\\r\\n Analog 2: %2\\r\\n\\r\\n","H"	*Display current configuration*
AT+EGTPH=,0	 OK	*Erase the parameter*

Defined values:

<**str**> Custom string. Maximum 200 characters.

<**aux**> "0" : will erase the <**str**> parameter.
"H" : indicating a valid path string.

These tables show the equivalence with the parameters used in the frame AT+EGFRT:

"ID"	"TS"	"TM"	"CU"	"OW"
%i	%s	%t	%u	%w

"IP"	"IP1"	"IP2"	"IP3"	"IP4"	"IP5"
%p	%J	%K	%L	%M	%N

"AA"	"AA0"	"AA1"	"AA2"	"AA3"
%m	%0	%1	%2	%3

"AN"	"AN0"	"AN1"	"AN2"	"AN3"
%b	%6	%7	%8	%9

"PC"	"PC1"	"PC3"	"PC4"	"PC4"	"PC5"
%z	%B	%C	%D	%E	%F

"TC"	"TC1"	"TC2"	"TC3"	"TC4"	"TC5"	"IM"	"LC"	"DT"
%T	%U	%V	%W	%X	%Y	%j	%r	%d

Notes :
The custom frame will be used only if the format AT+EGFRT=3 is used.
The command AT+EGFRT with no parameters will display the current list being used.

Example for a default frame type GPLOC, AT+EGFRT returns :

```
$GPLOC,%i,%t,%p,%b,%r,%d*
```

The reserved characters '\' and '%' as well as the **carriage-return** and **line-feed** characters may be added to the frame as follows:
To add the **carriage-return** character then it must be written as "**\\r**".
To add the **line-feed** character then it must be written as "**\\n**".
To add the '%' character then it must be written as "**%%**".
To add the '\' character then it must be written as "****".

Example:

```
AT+EGTPH="This frame was recorded at: %d-%t\\r\\n    Identifier:%i\\r\\n
Inputs:    %p\\r\\n    LogCode:   %r\\r\\n    Analog 1:  %1\\r\\n    Analog 2:
%2\\r\\n\\r\\n","H"
```

Will produce the following frame on the server:

```
This frame was recorded at: 010104-004530.00
    Identifier:352648065387482
    Inputs:    00000
    LogCode:   12
    Analog 1:  4.054 Volts
    Analog 2:  3.670 Volts
```

4.2.4 +EGTAK / +LOCTAK – acknowledge string and return delay in TCP

Description:

This command allows to enter the value of the acknowledge string returned after having sent a data frame to the remote site, and to program the waiting time of this acknowledge.

Syntax:

AT+EGTAK=<"string">[,<param>,<time>]

Examples :

Command	Possible Responses	Notes
AT+EGTAK=?	`+EGTAK: "Value for Ack",0-1,(Delay:0-65535)` `OK`	*Display syntax*
AT+EGTAK=”OK”	`OK`	*The string OK validates the received frame with the default delay, otherwise the unit will re-send 5 times and then closes the TCP link*
AT+EGTAK?	`+EGTAK: "OK",1,200` `OK`	*Display current configuration*
AT+EGTAK=”OK”,,100	`OK`	*The string OK validates the received frame with a waiting time of 10 seconds, otherwise the unit will re-send 5 times and then closes the TCP link*
AT+EGTAK=,0	`OK`	*Erase the parameters*
AT+EGTAK="",0	`OK`	*Erase the parameters*

Defined values:

<**string**> Acknowledgement character string. Maximum 50 characters.
Default = "" (empty).

<**param**> Parameter to manage the character string <**string**>.
0 : erase, the string must be empty.
1 : valid acknowledgement character string

<**time**> Waiting time in multiples of 100ms, default = 200 (20 seconds).

Notes:

- After having sent a frame, the unit will wait up to the timeout <**time**> to receive the acknowledgement character string. After this time, the unit will re-send the same frame up to 4 times and then close the TCP link. The unit will restart the TCP link and repeat the sequence.
- If the valid acknowledgement character string is received then the timeout is stopped, the next frame is sent and the timeout restarted.
- Acknowledgement character string is case sensitive.

4.3 FTP configuration

4.3.1 +EGFSV / +LOCFSV – FTP Server name

Description:

This command will configure the IP addresses of the remote FTP servers used for application download and for the transfer of frames.

Syntax:

+EGFSV=<"addrDwl">,<"addrPut">

Examples :

Command	Possible Responses	Notes
+EGFSV=?	+EGFSV: (100),(100) OK	*Display syntax*
+EGFSV="dwlServer","123.98.76.54"	 OK	*Set parameters*
+EGFSV?	+EGFSV: "dwlServer","123,98,76,54" OK	*Display current configuration*
+EGFSV=" ","123.98.76.54"	 OK	*Erase the download parameter*
AT+EGFSV?	+EGFSV: "","123,98,76,54" OK	*Display current configuration*

Defined values:

<addrDwl> IP address of the download server (“xxx.xxx.xxx.xxx” or “www.ftpserver.com”). This server will be accessed when downloading the application upgrade file. Maximum 100 characters.

<addrPut> IP address of the position transfer server (“xxx.xxx.xxx.xxx” or “www.ftpserver.com”).
This server will be accessed when transferring frames via FTP (AT+EGSND=3). Maximum 100 characters.

4.3.2 +EGFUN / +LOCFUN – FTP User Name

Description:

This command will configure the usernames of the remote FTP servers used for application download and for the transfer of frames.

Syntax:

AT+EGFUN=<"userDwl"><"userPut">

Examples :

Command	Possible Responses	Notes
AT+EGFUN=?	+EGFUN: (50),(50) OK	*Display syntax*
AT+EGFUN="userDwl","userPut"	 OK	*Set parameters*
AT+EGFUN?	+EGFUN: "userDwl","userPut" OK	*Display current configuration*
AT+EGFUN=" ","userPut"	 OK	*Erase the download parameter*
AT+EGFUN?	+EGFUN: "","userPut" OK	*Display current configuration*

Defined values:

<userDwl> User name of the download server. Maximum 50 characters.

<userPut> User name of the position transfer server. Maximum 50 characters.

4.3.3 +EGFPW / +LOCFPW – FTP password

Description:

This command will configure the passwords of the remote FTP servers used for application download and for the transfer of frames.

Syntax:

AT+EGFPW=<"passDwl">,<"passPut">

Examples :

Command	Possible Responses	Notes
AT+EGFPW=?	+EGFPW: (50),(50) OK	*Display syntax*
AT+EGFPW="passDwl","passPut"	 OK	*Set parameters*
AT+EGFPW?	+EGFPW: "passDwl","passPut" OK	*Display current configuration*
AT+EGFPW="","passPut"	 OK	*Erase the download parameter*
AT+EGFPW?	+EGFPW: "","passPut" OK	*Display current configuration*

Defined values:

<**PassDwl**> Password of the download server. Maximum 50 characters, case-sensitive.

<**PassPut**> User name of the position transfer server. Maximum 50 characters, case-sensitive.

4.3.4 +EGFPT / +LOCFPT – FTP port number

Description:

This command will configure the ports of the remote FTP servers used for application download and for the transfer of frames.

Syntax:

AT+EGFPT=<portDwl>,<portPut>

Examples :

Command	Possible Responses	Notes
AT+EGFPT=?	+EGFPT: (1-65535), (1-65535) OK	*Display syntax*
AT+EGFPT=1234	 OK	*Set parameter*
AT+EGFPT?	+EGFPT: 1234,21 OK	*Display current configuration*

Defined values:

<**portDwl**> Port of the download server (1 to 65535). Default = 21.

<**portPut**> Port of the position transfer server (1 to 65535). Default = 21.

4.3.5 +EGFMO / +LOCFMO – FTP mode

Description:

This command will configure the modes of the remote FTP servers used for application download and for the transfer of frames.

Syntax:

AT+EGFPT=<modeDwl>,<modePut>

Examples :

Command	Possible Responses	Notes
AT+EGFMO=?	+EGFMO: (0-1),(0-1) OK	*Display syntax*
AT+EGFMO=1,1	 OK	*Set parameters*
AT+EGFMO?	+EGFMO: 1,1 OK	*Display current configuration*

Defined values:

<**modeDwl**> Mode of the download server (0 = Active, 1 Passive). Default = 1.

<**modePut**> Mode of the position transfer server (0 = Active, 1 Passive). Default = 1.

Notes:

The mode for the download server will always be set to 1 (Passive).

4.3.6 +EGFPP / +LOCFPP – FTP put path

Description:

This command will configure the path on the remote FTP server used for the transfer of frames.

Syntax:

AT+EGFPP=<"pathPut">

Examples :

Command	Possible Responses	Notes
AT+EGFPP=?	+EGFPP: (50) OK	*Display syntax*
AT+EGFPP="passPut"	 OK	*Set parameters*
AT+EGFPP?	+EGFPP: "passPut" OK	*Display current configuration*
AT+EGFPP="passPut"	 OK	*Erase the parameter and restore default path*
AT+EGFPW?	+EGFPP: "." OK	*Display current configuration*

Defined values:

<**PassPut**> Path name of the position transfer server (default “.”). Maximum 50 characters.

Notes:

- If the path is erased then the default path will be the server root directory (“.”).

4.3.7 +EGFPF / +LOCFPF – FTP put filename

Description:

This command will configure the filename on the remote FTP server used for the transfer of frames.

Syntax:

AT+EGFPF=<"filenamePut">

Examples :

Command	Possible Responses	Notes
AT+EGFPF=?	+EGFPP: (100) OK	*Display syntax*
AT+EGFPF="%D_%H.txt"	 OK	*Set parameters*
AT+EGFPF?	+EGFPP: "%D_%H.log" OK	*Display current configuration*
AT+EGFPF=" "	 OK	*Erase the parameter and restore default filename*
AT+EGFPF?	+EGFPP: "%I_%D_%H.txt" OK	*Display current configuration*

Defined values:

<**filenamePut**> Filename of the position transfer server (default "**%I_%d_%h.txt**"). Maximum 100 characters.

Notes:

If the filename is erased then the default filename will be ("%I_%D_%H.txt").

The value "**%I**" will add the unit's identifier to the filename.
The value "**%D**" will add the first valid date of the data transmitted to the filename.
The value "**%H**" will add the first valid hour of the data transmitted to the filename.
The value "**%s**" will add the timestamp indicating the moment of creation of the file to the filename.
The format is, for example: "**1452524782**" indicating the number of seconds that have elapsed since January 1, 1970 (midnight UTC/GMT), not counting leap seconds.
The value "**%S**" will add the timestamp indicating the moment of creation of the file to the filename.
The format is "**YYYYMMDD_hhmmss**", for example: "20160111_150622".
The value "**.txt**" will add ".txt" to transmitted in the filename.

Example, the name "**%I_%D_%H.txt**" will create for the following frame :

```
$GPLOC,358696000019935,161958.00,00000,HNNN,11080000000004392,12,041113*60
```

the filename : **358696000019935_041113_161958.txt**

The content of the file will be:

```
$GPLOC,358696000019935,161958.00,00000,HNNN,11080000000004392,12,041113*60
```

Each file created on the server will have a maximum size of about 10k bytes (default value specified by **AT+EGFTPSIZE**). The index is updated after successful transfer of the file to the server.

Example, the name "**I_%D_%H__%s_%S.txt**" will create for the following frame :

```
$GPLOC,358696000019935,161958.00,00000,HNNN,11080000000004392,12,041113*60
```

the filename : **358696000019935_041113_161958__1452524782_20160111_150622.txt**

The content of the file will be:

```
$GPLOC,358696000019935,161958.00,00000,HNNN,11080000000004392,12,041113*60
```

4.3.8 +EGFTPSIZE/ +LOCFTPSIZE – FTP send file maximum size

Description:

This command will configure the maximum size of the file used and for the transfer of frames via FTP.

Syntax:

AT+EGFTPSIZE=<size>

Examples :

Command	Possible Responses	Notes
AT+EGFTPSIZE=?	+EGFTPSIZE: (500-100000) OK	*Display syntax*
AT+EGFTPSIZE=50000	 OK	*Set parameter*
AT+EGFTPSIZE?	+EGFTPSIZE: 50000 OK	*Display current configuration*

Defined values:

<size> Maximum size of file for transfer of frames (500 to 100000). Default = 10000.

4.4 EMAIL configuration

4.4.1 +EGVSMTP +LOCVSMTP – SMTP Configuration

Description:
This command displays the SMTP and email configuration of the unit.

Syntax:
AT+EGVSMTP

Examples :

Command	Possible Responses
AT+EGVSMTP	SMTP CONFIGURATION SMTP Port ..... (+EGSMTPPT) 25 SMTP Host Name .....(+EGSMTPHN) "smtp.mail.google.com" SMTP User Name .....(+EGSMTPUN) "ercogener_smtp" SMTP Password .....(+EGSMTPPW) "ercogener8303" SMTP Sender Name .....(+EGSMTPSN) "358730xxxxxx" (default = IMEI) SMTP Sender Address .....(+EGSMTPSE) "smtp@ercogener.com" SMTP Recipient.....(+EGMAIL) "ercoserver@ercogener.com" SMTP Subject.....(+EGSUBJ) "%I_%D_%H" OK

Notes: Values between "" are given as example.

4.4.2 +EGSMTPPT / +LOCSMTPPT – SMTP port number

Description:
This command allows to enter the value of the "**SMTP PorT**".

Syntax:
AT+EGSMTPPT=<port>

Examples :

Command	Possible Responses	Notes
AT+EGSMTP=25	OK	*Set parameter*
AT+EGSMTP?	+EGSMTP: "1234" OK	*Display current configuration*

Defined values:
<port> SMTP port number (1 to 65535). Default = 25.

4.4.3 +EGSMTPHN / +LOCSMTPHN – SMTP Host name

Description:
This command allows to enter the name of the SMTP server (URL) address "**SMTP Host N**ame".

Syntax:
AT+EGSMTPHN=<"name">

Examples :

Command	Possible Responses	Notes
AT+EGSMTPHN="smtp.ercogener.com"	OK	*Set parameter*
AT+EGSMTPHN?	+EGSMTPHN: "smtp.ercogener.com" OK	*Display current configuration*

Defined values:
<**name**> URL of the SMTP server. Maximum 120 characters.

4.4.4 +EGSMTPUN / +LOCSMTPUN – SMTP user name

Description:
This command allows to enter the "**U**ser**N**ame" of the SMTP server.

Syntax:
AT+EGSMTPUN=<"UserName">

Examples :

Command	Possible Responses	Notes
AT+EGSMTPUN="user"	OK	*Set parameter*
AT+EGSMTPUN?	+EGSMTPUN: "user" OK	*Display current configuration*

Defined values:
<**UserName**> User name of the SMTP server. Maximum 64 characters.

4.4.5 +EGSMTPPW / +LOCSMTPPW – SMTP password

Description:
This command allows to enter the "**SMTP P**ass**W**ord".

Syntax:
AT+EGSMTPPW=<"PassWord">

Examples :

Command	Possible Responses	Notes
AT+EGSMTPPW="pass"	OK	*Set parameter*
AT+EGSMTPPW?	+EGSMTPPW: "pass" OK	*Display current configuration*

Defined values:
<**PassWord**> SMTP server password. Maximum 64 characters. Password is case-sensitive.

4.4.6 +EGSMTPSN / +LOCSMTPSN – SMTP email sender name

Description:

This command allows to enter the "**S**ender**N**ame" of the email using SMTP server. This parameter will appear in the 'From:' field in the header of the received email.

Syntax:

AT+EGSMTPSN=<"SenderName">

Examples :

Command	Possible Responses	Notes
AT+EGSMTPSN="sender"	OK	*Set parameter*
AT+EGSMTPSN?	+EGSMTPSN: "sender" OK	*Display current configuration*

Defined values:

<SenderName> Sender name of the email using SMTP server. Maximum 120 characters. By default, modem IMEI.

4.4.7 +EGSMTPSE / +LOCSMTPSE – SMTP email sender address

Description:

This command allows to enter the "**E**mailAddressof**S**ender" of the email using SMTP server.

Syntax:

AT+EGSMTPSE=<"SenderEmailAddress">

Examples :

Command	Possible Responses	Notes
AT+EGSMTPSE="senderemailaddress@myprovider.com"	OK	*Set parameter*
AT+EGSMTPSE?	+EGSMTPSE: "senderemailaddress@myprovider.com" OK	*Display current configuration*

Defined values:

<SenderEmailAddress> Sender email address using SMTP server. Maximum 120 characters.

4.4.8 +EGMAIL / +LOCMAIL – Recipient email address

Description:

This command allows to enter the "**E**mailAddressof**R**ecipient" of the email using SMTP server.

Syntax:

AT+EGMAIL =<"RecipientEmailAddress">

Examples :

Command	Possible Responses	Notes
AT+EGMAIL="recipientemailaddress@hisprovider.com"	OK	*Set parameter*
AT+EGMAIL?	+EGMAIL: "recipientemailaddress@hisprovider.com" OK	*Display current configuration*

Defined values:

<RecipientEmailAddress> Recipient email address using SMTP server. Maximum 120 characters. Friendly names may be specified: "**Bob <robert.noname.hisaddress.com>**". Ensure a space between the friendly name and the '<' character. Multiple recipients may be specified each separated by '**;**'.

4.4.9 +EGSUBJ / +LOCSUBJ – Email subject

Description:

This command allows to enter the value of the "**SUBJ**ect" of the email .

Syntax:

AT+EGSUBJ=<"Subject">

Examples :

Command	Possible Responses	Notes
AT+EGSUBJ?	+EGSUBJ: "%I_%D_%H" OK	*Display syntax*
AT+EGSUBJ="my_frames_%I"	OK	*Set parameter*
AT+EGSUBJ?	+EGSUBJ: "my_frames_%I" OK	*Display current configuration*
AT+EGSUBJ=" "	OK	*Erase the parameter and restore default filename*
AT+EGSUBJ?	+EGSUBJ: "%I_%D_%H" OK	*Display current configuration*

Defined values:

<**Subject**> Subject of the email. Maximum 120 characters.

Notes:

If the subject is erased then the default email subject will be ("%I_%D_%H").

The value "**%I**" will add the unit's identifier to the email subject.
The value "**%D**" will add the first valid date of the data transmitted to the email subject.
The value "**%H**"will add the first valid hour of the data transmitted to the email subject.
The value "**%s**" will add the timestamp indicating the moment of creation of the email to the email subject.
The format is, for example: "**1452524782**" indicating the number of seconds that have elapsed since January 1, 1970 (midnight UTC/GMT), not counting leap seconds.
The value "**%S**" will add the timestamp indicating the moment of creation of the email to the email subject.
The format is "**YYYYMMDD_hhmmss**", for example: "20160111_150622".

Example, the subject "**%I_%D_%H**" will create for the following frame :

```
$GPLOC,358696000019935,161958.00,00000,HNNN,11080000000004392,12,041113*60
```

the subject : **358696000019935_041113_161958**

The content of email will be:

```
$GPLOC,358696000019935,161958.00,00000,HNNN,11080000000004392,12,041113*60
```

Each email created will have a maximum size of about 10k bytes (default value specified by **AT+EGSMTPSIZE**). The index is updated after successful transfer of the email.

Example, the subject "**I_%D_%H__%s_%S**" will create for the following frame :

```
$GPLOC,358696000019935,161958.00,00000,HNNN,11080000000004392,12,041113*60
```

the subject : **358696000019935_041113_161958__1452524782_20160111_150622**

The content of the email will be:

```
$GPLOC,358696000019935,161958.00,00000,HNNN,11080000000004392,12,041113*60
```

4.4.10 +EGSMTPSIZE/ +LOCSMTPSIZE – SMTP send file maximum size

Description:

This command will configure the maximum size of the file used and for the transfer of frames via SMTP.

Syntax:

AT+EGSMTPSIZE=<size>

Examples :

Command	Possible Responses	Notes
AT+EGSMTPSIZE=?	+EGSMTPSIZE: (500-100000) OK	*Display syntax*
AT+EGSMTPSIZE=50000	 OK	*Set parameter*
AT+EGSMTPSIZE?	+EGSMTPSIZE: 50000 OK	*Display current configuration*

Defined values:

<size> Maximum size of file for transfer of frames (500 to 100000). Default = 10000 bytes

5 SNTP Date/Time

The GSM and system real-time-clocks maybe set to the network date/time via the SNTP service. This may be done manually or automatically at a regular time interval.
To use this NTP function, the SIM card must be GPRS activated.

5.1 +EGNTP / +LOCNTP – SNTP configuration

Description:
This command will configure the SNTP service.

Syntax:
AT+EGNTP=<option>,<t>,<s>
AT+EGNTP=<option>,<server>,<port>
AT+EGNTP=<option>,<timeout>

Examples:

Command	Possible Responses	Notes
AT+EGNTP=?	+EGNTP: (0-4),(0-200)/(64),(0-1)/(1-65535) OK	*Display syntax*
AT+EGNTP?	+EGNTP: 0,0,0 +EGNTP: 1,"europe.pool.ntp.org",123 +EGNTP: 2,15 OK	*Display current configuration*
AT+EGNTP=0,24	OK	*Set auto-update configuration*
AT+EGNTP=0	+EGNTP: 0,24,0 OK	*Display auto-update configuration*
AT+EGNTP=4	0000/01/01-00:45:31: SNTP: update 0000/01/01-00:45:39: SNTP: send request 0000/01/01-00:45:40: SNTP: received data 0000/01/01-00:45:40: SNTP: got got response 0000/01/01-00:45:40: SNTP: UTC date and time: 13/11/04,15:33:06 0000/11/04-15:33:06: SNTP: System time has been set 2013/11/04-15:33:06: SNTP: stop request session 2013/11/04-15:33:06: SNTP: GSM RTC has been set	*Start manual update*
AT+EGNTP=3	+EGNTP: 3,13/11/04,15:35:25 OK	*Display current system time*

Defined values:

<option>

0: Display, modify auto-update configuration.
=0 - display current configuration.
=0,<t> - set auto-update rate, 0 to 720 hours, (default = 0, inactive).
=0,<t>,<s> - set auto-update rate, 0 to 720 hours, (default = 0, inactive).
- set auto-update at start-up, 0 = inactive (default), 1 = active.

1: Display, modify SNTP server configuration.
=1 - display current configuration.
=1,<"server"> - set server address (default = "europe.pool.ntp.org").
=1,<"server">,<port>
- set server address (default = "europe.pool.ntp.org").
- set server port (default = 123).

2: Display, modify SNTP response timeout configuration.
=2 - display current configuration.
=2,<timeout > - set SNTP response timeout, 1 to 60 seconds (default = 15).

3: Display system time.
=3 - display current system time.

4: Get SNTP date/time time manually.
=4 - Get SNTP date/time time and set GSM and system real-time-clocks.

80: Set SNTP server configuration to default values.
=80 - Set SNTP server configuration to default values.
- set server address (default = “europe.pool.ntp.org”).
- set server port (default = 123).

81: Set auto-update configuration to default values.
=81 - Set auto-update rate to default value.
- Set auto-update at start-up to default value.

Notes:

- The SNTP server uses IP/UDP via port 123. This should NOT be changed.

5.2 +EGUTC / +LOCUTC – Local time offset

Description:

This command allows the time in the recorded frames to be adjusted to be that of local time.

Syntax:

AT+EGUTC=<offset>

Examples :

Command	Possible Responses	Notes
AT+EGUTC=?	+EGUTC: "-11"/"+12" OK	*Display syntax*
AT+EGUTC=”+2”	 OK	*Set offset to +2 hours*
AT+EGUTC?	+EGUTC: "+02" OK	*Display current configuration*

Defined values:

<**offset**> The local time offset in hours, "-11" to "+12" (default = "+00").

Notes:

- The local time will adjust the timestamp of the recorded frames, the reset time and the timestamp of the traces.
- For example, if local time is 2 hours ahead of UTC time then this may be adjusted with AT+EGUTC="+2".
- All recorded frames will then be adjusted with this offset. Also, if the AT+EGRST configuration is set to "03.00", then the application will reset at 3h00 local time.

6 DUAL SIM

On units where two SIM holders are present, the user may configure the changeover between the two SIMs. When activated, the function monitors:

- GSM/GPRS network registration,
- CSQ level,
- detected networks.

6.1 +EGDSIM - DUAL SIM configuration

Description:

This command will configure the Dual SIM service

Syntax:

AT+EGDSIM=<mode>,<defsim>,<op1>,<tim1>,<csq>,<op2>,<tim2>

Examples:

Command	Possible Responses	Notes
AT+EGDSIM=?	`+EGDSIM: (0-3),(1-2),(5),(0-600),(0-31),(5),(10-600)` `OK`	*Display syntax*
AT+EGDSIM?	`+EGDSIM: 0,0,0,60,10,0,600` `OK`	*Display current configuration*
AT+EGDSIM=3	`+EGDSIM: 3,1,1` `OK`	*Show available SIMs. Here both SIMs are present.*
AT+EGDSIM=1,1,20820,45,10,20801,45	`OK`	*Enable Dual SIM mode. Set SIM 1 as preferred SIM. Set CSQ threshold, operator preferences and timeouts.*
AT+EGDSIM=2	`+EGDSIM: 2,1,12,Registered` `OK`	*Display current SIM used, CSQ and registration status.*

Defined values:

<mode>

0: Disabled (default).

1: Enabled (all other parameters must be correct).

2: Show current SIM being used, CSQ level and Dual-SIM registration status (**<mode>** must already be enabled):

Response: **+EGDSIM: 2,<SIM>,<CSQ>,<Registration state>**

SIM

Current SIM, 1 or 2

CSQ

Level, 0 to 31, 99

Registration state

"Registered" or "Unregistered"

3: Show available SIMs.

Response: **+EGDSIM: 3,<Sim1>,<Sim2>**

Sim1 and **Sim2**

0: absent

1: present

<defsim>

Select preferred SIM.

1: SIM 1 (default)

2: SIM 2.

<op1>
Expected operator for SIM 1 (numerical international operator code), default = 0 (Roaming).

<tim1>
Timeout before returning to SIM 2 (0 to 600 secs) (default 60 secs).

<csq>
Minimum CSQ threshold level (0 to 31) (default 10).

<op2>
Expected operator for SIM 2 (numerical international operator codes), default = 0 (Roaming).

<tim2>
Timeout before returning to SIM 1 (0 to 600 secs) (default 600 secs).

Notes:

This command will return "ERROR" if not running on a Genxxx5xe.

The numerical international operator codes may be found here:
http://en.wikipedia.org/wiki/Mobile_country_code

When operating on the preferred SIM, if the network has been lost or the CSQ is below the threshold level for the time **timN** then the operation will be changed to use the secondary SIM.

An attempt will be made to return to the preferred SIM after time **timN** regardless of network status and CSQ level.

Before changing SIM, if a specific operator has been specified for the next SIM then a check will be made to determine if this operator is present before changing. If not present then the SIM will not be changed.

However, if no specific operator has been specified for the next SIM ("0", Roaming), then operation will always be changed to the next SIM.

Refer to the Dual SIM flow chart in annex Erreur ! Source du renvoi introuvable. Erreur ! Source du renvoi introuvable. for operation details.

Examples:

AT+EGDSIM=1,1,20820,90,10,0,300

SIM 1 is the preferred SIM with operator "20820". Loss of network timeout is 90 seconds.
SIM 2 is the secondary SIM operating in Roaming mode. Timeout to return to preferred SIM 1 is 300 seconds. CSQ threshold level is 10.

Operation will start with SIM 1. If the network has been lost or CSQ has been low for at least 90 seconds, the unit will change over to the secondary SIM 2 and operate in the Roaming mode for a maximum of 300 seconds.

After 300 seconds the unit will check the presence of operator "20820" and if present will change back to the preferred SIM 1.

If whilst operating on the secondary SIM 2, the network has been lost or CSQ has been low for at least 90 seconds, the unit will change back to the preferred SIM 1.

7 Remote management and configuration

It is possible to send configuration information via communication channels, either via the SMS channel, or via the TCP channel or via DTMF codes (see chapter **7.3 DTMF codes over a GSM voice call)** over a GSM voice call.
This makes it possible to identify operating problems remotely from the device. Thus, a request by SMS for the reception level of the GSM signal (the SMS are sent with very low levels whereas a GPRS connection will not work) will determine if the device is in a "white" zone and explains the non-reception of the expected information, on the server side.

7.1 “Special” command messages

These commands may be entered in lower or upper-case.

7.1.1 +EGNRP / +LOCNRP – Request for non-response by SMS

Description:

This command allows to ask the system not to send response after receipt of a command SMS.
This command is active when it is in the text of the SMS or triggered via a Macro Command (see chapter **2.1.12 +EGMAC / +LOCMAC – Macro commands**). Its entry via the serial port has no effect. It is not saved.
Note : This command is accepted for SMS containing AT command and containing Macro-Commands (see chapter **2.1.12 +EGMAC / +LOCMAC – Macro commands**).

Syntax:

AT+EGNRP

Default configuration :

none

7.1.2 +EGNID / +LOCNID – Do not add identifier to response SMS

Description:

This command will result in the identifier NOT being added to the reply SMS.
This command is active when it is in the text of the SMS or triggered via a Macro Command (see chapter **2.1.12 +EGMAC / +LOCMAC – Macro commands**). Its entry via the serial port has no effect. It is not saved.
Note : This command is accepted for SMS containing AT command and containing Macro-Commands (see chapter **2.1.12 +EGMAC / +LOCMAC – Macro commands**).

Syntax:

AT+EGNID

Default configuration :

none

7.1.3 Configuration and remote control by SMS

Description:

- All commands are accepted by remote control via SMS.
- Phone number must be authorized (see chapter **2.1.7 +EGPHN / +LOCPHN – Authorized telephone numbers**) or Password must always be included.
- Password and commands must be separated by a 'space' character.
- The first command must begin with "AT" or must be a Macro Command (see chapter **2.1.12 +EGMAC / +LOCMAC – Macro commands**)
- Subsequent commands may omit the leading "AT"
- The command name of each AT command may be in upper or lower-case
- If the SMS is accepted, the modem returns a SMS containing "OK" unless the SMS contains +EGNRP.
- Long responses may result in multiple reply SMS(s).
- The presence of the command "+EGNRP" in the configuration SMS will deactivate the reply SMS.
- The presence of the command "+EGNID" in the configuration SMS will result in the identifier NOT being added to the reply SMS.

Syntax with AT commands and SMS response allowed:
[<password><*space*>]<**AT**command1><*space*><command2><*space*><command3>……

Syntax with AT commands and without SMS response:
[<password><*space*>]<**AT+EGNRP**><*space*><command1><*space*><command2>……

Syntax with Macro Command:
[<password><*space*>]<**MacroCde**>

Examples:

SMS to send	SMS response	Notes
0000 AT+EGSTK=0	OK	*Writing action with password needed*
0000 AT+EGSTK?	+EGSTK: 0,"00:00:00" OK	*Reading action with password needed*
AT+EGSND?	+EGSND: 0,"I","00:10" OK	*Without password : if the phone number has been saved in the Phone List (AT+EPPHN)*
0000 AT+EGNRP +EGSTK=1,"000010"	*no response*	*Writing action with password needed and no SMS reply*
0000 OUT1	OK	*(*)Macro Command with password needed*
OUT1	OK	*(*)Macro Command without password needed*

(*) execute the Macro Command previously set by the following syntax (see the chapter **2.1.12 +EGMAC / +LOCMAC – Macro**):

Example : close the output1 for 5 seconds:

AT+EGMAC=1,"OUT1","AT+EGOUT=0,1,50"

It is possible to initiate the update of the embedded application via the DOTA function. See chapter **7.4 +EGDWL / +LOCDWL – Remote download of a new application**.

7.2 Management and configuration via GPRS link in TCP

The unit may be configured by sending individual commands from the remote TCP server to the unit.

When the unit receives data from the TCP link, it analyses it and searches for the command strings "AT" or "+LOC" or "+EG" at the beginning of the data. If they are present, it processes the command and returns the command response.

The remote TCP server must send individual commands – they cannot be concatenated.

The command name of each command may be in upper or lower-case. Usual command syntax must be used.

All available commands may be read (AT+EGSTK?) and configured (AT+EGSTK=3).

7.2.1 Example of commands via TCP link

Command : AT+EGMAC=1,"OUT1","AT+EGOUT=0,1,50"
Response : OK

Command : AT+EGSTK?
Response : +EGSTK: 0,"00:01:00"
Response : OK

Command : +EGFRT?
Response : +EGFRT: 3,"TM","DT"
Response : OK

7.3 DTMF codes over a GSM voice call

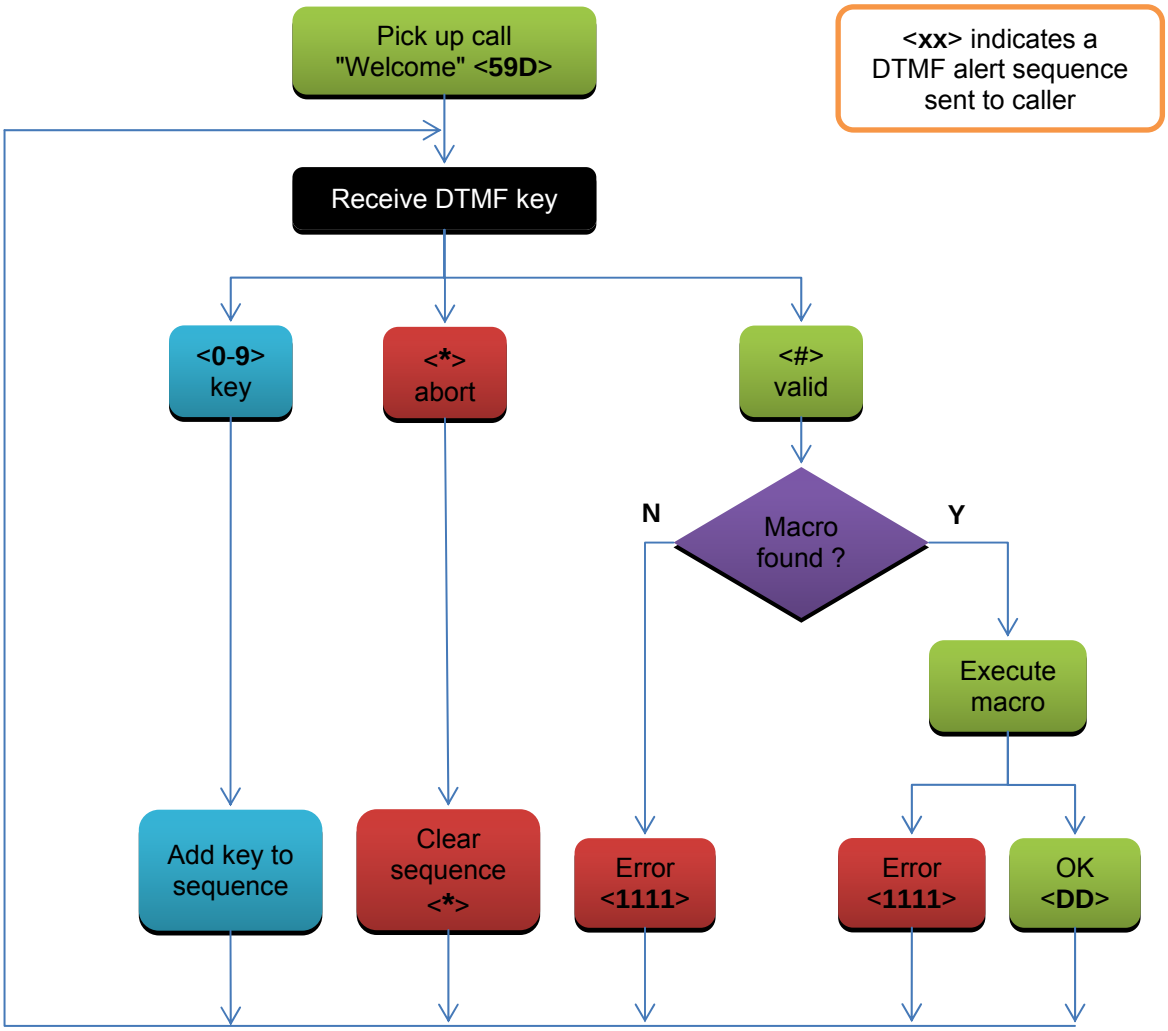
This function is standard on GenPro 354e and optional on GenPro x25e (please contact ERCOGENER).

If the macro commands are configured (see chapter **2.1.12 +EGMAC / +LOCMAC – Macro commands**) then they may be executed by DTMF codes over a GSM voice call.

It is advisable to only use the characters '0' - '9' in the macro command names to ensure that all telephones may execute the macro commands.

Automatic pick-up of an incoming call will occur if the RING parameter **ATS0** (which indicates the number of rings before going off-hook) is non-zero, and the incoming call is from a valid number listed in the telephone book (see chapter **2.1.7 +EGPHN / +LOCPHN – Authorized telephone numbers**).

When the call is picked-up the following algorithm is used to detect valid DTMF key sequences and execute the macro commands:



The "welcome" alert will be re-sent to the caller after 10 seconds of inactivity. The call will automatically hang-up after 60 seconds of inactivity.

Notes:

If the macro contains a command to send an SMS then the "OK" alert will be heard when the SMS has been sent.

7.4 +EGDWL / +LOCDWL – Remote download of a new application

Description:

This command is used to initiate the update of application. This is often to add new functions. This action is also called "DOTA" (Download Over The Air).

The transfer is possible only in GPRS via a FTP connection. As a consequence, the FTP parameters must be set in the device with the commands **AT+EGFSV**, **AT+EGFUN** and **AT+EGFPW**.

Syntax:

AT+EGDWL=<slot>,<"filename">,<"path"><filetype>

Defined values:

<slot>	(1-2) flash slot number where the file is written before installed.
<filename>	file name to download.
<path>	directory path for the file.
<filetype>	0: application file (default if omitted). 1: bootloader file (uses modified bootloader file for DOTA. Consult **ERCOGENER**).

ORIGIN OF THE COMMAND :

The command can be sent via the serial link, a SMS or the TCP link.

When the command is received, the unit connects to the download server using the FTP parameters. The transfer is made, and then the application is installed. The unit is restarted with the new application if successful or with the old application in case of a problem.

Examples:

Via serial link

AT+EGDWL=1,"EasePro_V222_boot_sdram_lzo.bin","./DWL" (filename, directory: "./DWL")

By a SMS

0000 AT+EGDWL=1,"EasePro_V222_boot_sdram_lzo.bin","." (file in the root directory of the server: ".")

8 General features

8.1.1 GSM Led Status

The GSM LED will indicate the status of the connexion to the network:

State	ON time	OFF time	Description
Fixed ON	Always ON	-	No network / no SIM
Flash	500ms	1s	Attached to GSM only
Flash	500ms	500ms	Connecting to GPRS network (waiting for IP address)
Flash	200ms	800ms	Connected to GPRS network (got IP address)
Flash	100ms	100ms	TCP/UDP session open

8.1.2 Internal clock

Description:

An internal clock running on 24H, starts with the power-up of the product.
This function uses the internal clock of the GSM module which is set by the command :

AT+CCLK

Syntax:

AT+CCLK="yy/MM/dd,hh:mm:ss±TZ"

Examples:

Command	Possible Responses	Notes
AT+CCLK="13/11/25"14:10:00+00”	OK	*Set Date & Time& Time zone*
AT+CCLK?	+CCLK: "13/11/25,14:10:00+00" OK	*Display current values*

Notes:

- In case of power OFF or Reset, the Date and Time are saved only if the modem has an internal backup battery (standard for GenPro x54e / Option for GenPro x25e).
- Date & Time may be updated via NTP in GPRS (see chapter **5.1 +EGNTP / +LOCNTP – SNTP configuration**).

8.1.3 +EGMFLH=3 – Erase all parameters

Description:

This command allows will erase all the parameters and the circular buffer saved in the flash memory (Flash objects).
After the erase, the modem performs a Reset and the application EasePro is restarted. The modem is now in factory default setting.
Note : Only parameters and data are deleted, the application EasePro is not erased.

Syntax:

AT+EGMFLH=3

Examples:

Command	Possible Responses	Notes
AT+EGMFLH=3	*** ERASING SERIAL FLASH *** *** RESTARTING CPU ***	*Erase Flash objects and Restart the application*

8.1.4 ATI8 – Display application version and build information

Description:

This command will display the version and build information of the application.

Syntax:

ATI8

Example:

Command	Possible Responses
ATI8	EasePro V2.23_EGM431 - GenProxxx - Wed Apr 19 17:03:21 2017 OK *Display application version and build information*

8.1.5 +EGTRC / +LOCTRC – Activate traces

Description:

It is possible to activate the trace mode which allows to follow the operation of the module. The trace information is send to the serial port. By default, all traces are active.

Syntax:

AT+EGTRC=<level>

Examples :

Command	Possible Responses	Notes
AT+EGTRC=?	+EGTRC: (0-255) OK	*Display syntax*
AT+EGTRC=17	 OK	*Validate the traces DISPLAY_GPRS (level 16) and DISPLAY_GENERAL (level 1)*
AT+EGTRC?	TRACE : GENERAL ON, EGEVT OFF, INPUT OFF, GSM OFF, GPRS ON, DATA OFF, DOWNLOAD OFF, SMTP OFF OK	*Display current configuration*
AT+EGTRC	 OK	*Inverse all trace levels*
AT+EGTRC?	TRACE : GENERAL OFF, EGEVT ON, INPUT ON, GSM ON, GPRS OFF, DATA ON, DOWNLOAD ON OK, SMTP ON	*Display current configuration*

Defined values:

<level> Trace level (see notes).

Notes:

The following trace levels are available :

1 : DISPLAY_GENERAL, general operating information.
2 : DISPLAY_EGEVT, information about the SIM card and the attachment to network.
4 : not used.
8 : DISPLAY_GSM, information about attachment to GSM network.
16 : DISPLAY_GPRS, information about attachment to GPRS network and transfer in TCP and FTP.
32 : DISPLAY_DATA, information about attachment to network and transfer in connection DATA GSM.
64 : DISPLAY_DOWNLOAD, information about application updating in DOTA mode (Download Over The Air).
128 : DISPLAY_SMTP, information about SMTP operation).

The command **AT+EGTRC** with no parameters will inverse all traces.
Traces are automatically disabled when the local serial port is used for data transmission AT+EGSND=4 (See chapter **3.7 +EGSND / +LOCSND – Sending frame**).

Default configuration :

+EGTRC: 255

8.2 +EGCMGS – Send SMS

Description:

This command is used to send an SMS.

Syntax:

AT+EGCMGS="<da>","<text>"

Examples:

Command	Possible Responses
AT+EGCMGS=?	+EGCMGS: "<da>",<"text"> 0K *Note: Display syntax*
AT+EGCMGS="0612345678","Hello World"	CMGS: 193 OK *Send an SMS*

Defined values:

<da>

Destination address – a telephone number.

<text>

Text message, 160 alpha-numeric characters.

Notes:

This command can easily send an SMS in one single command line (no need to enter CTRL-Z).

Carriage returns and line-feeds may be entered with "**\r**" and "**\n**".

The ASCII characters equivalent to 0x0D 0x0A are not allowed.

Example:

AT+EGCMGS="0612345678","Hello\r\nWorld"
+CMGS: 193
OK

9 Hayes registers

Description:

Various functions of the module may be configured via the use of internal Hayes registers. These registers may be set and read:

Syntax:

Write: ATSn=decimal value
Read: ATSn?
Response: decimal value

The registers may be saved to non-volatile memory with the command **AT&W**. This will ensure that the new values are used each time that the application starts up.
The command **AT&V3** will display all the registers values (see examples below).
The command **AT&F** will restore the registers to their default values.

Examples:

Command	Possible Responses
ATS0?	000 OK *Note: Read register 0 (number of RINGS before automatic call pick-up)*
ATS0=2	OK *Note: Set register 0 to 2 (2 RINGS before automatic call pick-up)*
ATS0?	S0: OK *Note: display register S0*
AT&V3	S0:002 S7:060 S27:000 S37:000 OK *Note: display all registers. Note: S7 and S27 are not used.*
AT&W	OK *Note: Save registers to non-volatile memory*

9.1 S0 – Automatic call pick-up

Default value = 0. Specifies the number of RINGs before automatic pick-up of an incoming GSM data call. If 0 then no automatic pick-up. Note that there is no automatic pick-up on incoming voice calls.

9.2 S37 – Transfer inactivity timeout

Default value = 0, units minutes. If this value is different to 0 then during a GSM data call, the call may be automatically terminated if there is no further exchange of data between the two sites.

9.3 Q – Quiet mode

Description:

This command is used to control the command responses.

The parameter may be saved in the module with the command AT&W.

Syntax:

ATQ, ATQn, ATQ

Examples:

Command	Possible Responses
ATQ	0K *Note: Off, display result codes, user sees command responses.*
ATQ0	0K *Note: Off, display result codes, user sees command responses.*
ATQ1	 *Note: On, result codes are suppressed, user does not see command responses.*

Defined values:

<n>

0 (default value) , same as ATQ, Quiet Mode OFF
1 Quiet Mode ON

10 CONFIGURATION EXAMPLES

10.1 Sending SMS alarm on digital input

Configuration example for a GenPro x25e to send SMS alarm triggered by digital Input 1 and 2.
Input 1 triggers SMS to the first phone number.
Input 2 triggers SMS to the first and the second phone numbers.

```
AT+EGINP=1,1,5,"O","D",1,1                  // setting input 1 : send SMS, double action + Log
AT+EGINP=2,1,5,"O","D",1,1                  // setting input 2 : send SMS, double action + Log

AT+EGINP=1,"C","INPUT1=ON",1                // message sent on input1=ON
AT+EGINP=1,"O","INPUT1=OFF",1               // message sent on input1=OFF
AT+EGINP=2,"C","INPUT2=ON",1                // message sent on input2=ON
AT+EGINP=2,"O","INPUT2=OFF",1               // message sent on input2=OFF

AT+EGPHN=1,"+33600000001",129               // setting the first phone number
AT+EGPHN=245,"+33600000002",129             // setting the second phone number

AT+EGINP=1,"P",1                  // SMS on input 1 will sent only to the first phone number
AT+EGINP=2,"P",1,245              // SMS on input 2 will sent to the both phone numbers (1 & 245)
```

10.2 Sending SMS alarm on digital and analogue inputs

Configuration example for a GenPro x54e to send SMS alarm triggered by digital Input 1, analogue Input1 and analogue input 2:
Input 1 triggers SMS to the first phone number.
ANA2 triggers SMS to the first and the second phone numbers.
ANA3 triggers SMS to the first, the second and the third phone numbers.

```
AT+EGINP=1,1,5,"O","D",1,1                  // setting input 1 : send SMS, double action + Log

AT+EGANA=1,1,2,1000,7000,"D",100,1          // setting ANA1 : double action + Log
AT+EGANA=2,1,2,2500,4500,"D",100,1          // setting ANA2 : double action + Log

AT+EGINP=1,"C","INPUT1=ON",1                // message sent on input1=ON
AT+EGINP=1,"O","INPUT1=OFF",1               // message sent on input1=OFF

AT+EGINP="A1","L","Tank1 Low",1             // message sent on ANA1=LOW
AT+EGINP="A1","N","Tank1 Normal",1          // message sent on ANA1=NORMAL
AT+EGINP="A1","H","Tank1 High",1            // message sent on ANA1=HIGH

AT+EGINP="A2","L","Tank2 Low",1             // message sent on ANA2=LOW
AT+EGINP="A2","N","Tank2 Normal",1          // message sent on ANA2=NORMAL
AT+EGINP="A2","H","Tank2 High",1            // message sent on ANA2=HIGH

AT+EGPHN=1,"+33600000001",129               // setting the first phone number
AT+EGPHN=2,"+33600000002",129               // setting the second phone number
AT+EGPHN=3,"+33600000003",129               // setting the third phone number

AT+EGINP=1,"P",1                  // SMS on input 1 will sent only to the first phone number
AT+EGINP="A1","P",1,2             // SMS on ANA1 will sent to the both phone numbers (1 & 2)
AT+EGINP="A2","P",1-3             // SMS on ANA2 will sent to the three phone numbers (1,2,3)
```

10.3 Datalogger : Sending a cyclic email containing the recorded frames

Configuration example for a GenPro x54e in order to cyclically log data into the flash memory every 30 seconds and send them into an email by SMTP every 60 minutes.

```
AT+EGIDT=0,”STATION_123”,0                  // setting the identifier frame

AT+EGNTP=0,12,1                             // setting the NTP update at start-up and every 12 hours

AT+EGFRT=3,"ID","LC","DT","TM","IP","AN","AA"      // setting the format of the frame

AT+EGINP=1,1,5,"O","D",0,1                  // setting the five digital inputs in Datalogger mode only
AT+EGINP=2,1,5,"O","D",0,1
AT+EGINP=3,1,5,"O","D",0,1
AT+EGINP=4,1,5,"O","D",0,1
AT+EGINP=5,1,5,"O","D",0,1

AT+EGANA=1,1,2,1000,8200,"D",100,1          // setting User ANA1 thresholds + Log
AT+EGANA=2,1,2,1800,7500,"D",100,1          // setting User ANA2 thresholds + Log
AT+EGANA=3,1,2,3450,4800,"D",100,1          // setting internal Vbatt thresholds + Log

AT+EGSTK=1,”00:00:30”                       // setting the cyclic storage every 30 seconds

AT+EGASV="my_operator_apn","",""            // setting the Access Point Name of the GSM Operator

// setting the SMTP parameters :
        AT+EGSMTPHN="smtp_Host_Name"
        AT+EGSMTPPT="smtp_Port_Number"
        AT+EGSMTPUN="smtp_User_Name"
        AT+EGSMTPPW="smtp_PassWord"
        AT+EGSMTPSN="Sent_from_EasePro"
        AT+EGSMTPSE="Sender_Adress@ercogener.com"
        AT+EGMAIL="Recipient_Adress@ercogener.com"
        AT+EGSUBJ="%i_%d_%h"

AT+EGSND=5,”I”,”00:60”                      // send stored frames via SMTP every 60 minutes
```

10.4 Datalogger counter mode : Sending data over TCP

Configuration example for a GenPro x54e in order to cyclically (every 20 seconds) log in flash memory the values of the counter inputs and send them to a TCP server in a permanent TCP connection. Acknowledgment is required from the TCP server.

```
AT+EGIDT=0,”SITE02”,0                       // setting the identifier frame

AT+EGNTP=0,12,1                             // setting the NTP update at start-up and every 12 hours

AT+EGFRT=3,"ID","LC","DT","TM","PC","IP”    // setting the format of the frame

AT+EGINP=1,1,1,"O","P",0,1                  // setting the five digital inputs in Counter & Datalogger mode
AT+EGINP=2,1,1,"O","P",0,1
AT+EGINP=3,1,1,"O","P",0,1
AT+EGINP=4,1,1,"O","P",0,1
AT+EGINP=5,1,1,"O","P",0,1

AT+EGSTK=1,”00:00:20”                       // setting the cyclic storage every 20 seconds
```

AT+EGASV="*my_operator_apn*","","" // setting the Access Point Name of the GSM Operator
AT+EGTSV="193.xxx.xxx.xxx",10035 //setting the IP address and port number of the TCP server

AT+EGTAK="**OK**",0,200 // Setting the acknowledgment feature with ACK="OK"

AT+EGSND=**2**,"**P**" // Setting the TCP/IP in permanent connection

10.5 Management of the outputs remotely by SMS

Configuration example for a GenPro x54e to manage the outputs 1 and 2 on receiving a specific predefined text by SMS.

AT+EGMAC=1,"**O11**","AT+EGOUT=0,1" // setting action when receiving the text "**O11**"
AT+EGMAC=2,"**O10**","AT+EGOUT=0,0" // setting action when receiving the text "**O10**"

AT+EGMAC=3,"**OUT2**","AT+EGOUT=1,1,50" // setting action when receiving the text "**OUT2**"

AT+EGPHN=**1**,"+33600000001",129 // Phone number allowed to accept incoming configuration
// SMS without password.

Example of SMS to send from the phone number +33600000001 (password not required):

O11 // if received : action= output1 closed
O10 // if received : action= output1 opened

Example of SMS to send from the phone number different of +33600000001 (password required):

0000 OUT2 // if received : action= output2 closed during 5s