TechnoKom

GLONASS · GPS

GSM

AutoGRAPH

CONTROL SMS AND
SERVER COMMANDS

TABLE OF CONTENT

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INTRODUCTION

This User Manual applies to AutoGRAPH on-board controllers and contains description of SMS and server commands, intended for the device remote configuration, control and settings request.

SMS commands are intended to be send to the device SIM card. Server commands are intended to be send via data server which the device transfers data.

Besides remote control commands, AutoGRAPH on-board controllers can be set up by means of the GSMConf application intended for configuration and diagnostic of controllers via USB.

IMPORTANT

All information contained in this User Manual is based on current data (at time of writing) and is deemed to be valid as of the date of publication. Technokom reserves the right to modify the information or specifications without prior notice or commitment.

CONFIGURATION USING CONTROL COMMANDS

AutoGRAPH onboard controllers are able to receive control commands from data server or a phone number via SMS.

CONFIGURATION VIA SMS

SMS with a control command must be sent to phone number of the SIM-card inserted in the AutoGRAPH device. If the device operates with two SIM-cards, the command must be sent to number of an active SIM-card. The reply on the command is sent to the telephone number from which the control command was sent.

When inserting SIM-card to the device, all SMS are automatically deleted from it. The device saves only those SMS which haven't been sent for any reason.

Most of SMS commands have the following format:
```
password COMMAND=parameters;
```

where
- **password** – the 8-digit password, used to provide the access to the device data on the server. This password is specified in the device using the GSMConf software or control command "PASSWORD".
- **COMMAND** – control command supported with the AutoGRAPH-GSM device.
- **parameters** – configurable parameters of the control command.

The following commands have the format different from the format described above: GET, RESET and USSD. For more information on formats of these commands, see description of these commands.

If command is processed successfully, the reply on it consists with the command.
Reply on most of control commands has the following format:
```
serial(alias)#COMMAND=parameters;
```

where
- **serial** – device serial number;
- **alias** – device name;
- **COMMAND** – control command which has been sent to the device;
- **parameters** – configurable parameters of control command.

Control command must be typed using only the uppercase letters of Latin alphabet. The reply on the command will be sent only if the correct password is specified in the SMS and the command format matches with the required format of the control commands. Otherwise, the command mustn't be processed.

If base station, which the AutoGRAPH device is connected to, supports GPRS the device sends "GPRS" flag in the reply. See sample reply on command PERIODWR:

• **Reply 1**
```
52500()#GPRS:PERIODWR=5;
```
Data transmission via GPRS is available, the base station, which the device is connected to, supports GPRS.

• **Reply 2**
```
52500()#PERIODWR=5;
```
Data transmission via GPRS is unavailable. The base station, which the device is connected to, doesn't support GPRS or GPRS is disabled in the SIM-card.

If the device name is specified, it will be sent in reply to identify the device.

Sample reply (the device has alias Kamaz625):
```
52500(Kamaz625)#GPRS:PERIODWR=5;
```

CONFIGURATION VIA SERVER

Most of control commands can be sent to the device via the data server which the device sends data to. The format of server commands is similar to the format of SMS commands. Reception of control commands from the server is supported by AutoGRAPH devices with firmware of version 5.0 and higher.

To send a control command via the server:
• Create a new folder in the \Conf folder on the server. Rename the new folder as serial number of the device.
• Create text file in this folder and change the file extension to .atc. The file can has any name. This file is used to specify control commands. All commands should be specified in new line.

The server commands must match the following format:
```
COMMAND=parameters;
```

• **COMMAND** – control command which will be sent to the device;
• **parameters** – configurable parameters of control command.

Sample:
```
PERIODSEND=60;
PERIODWR=10;
```

When sending commands from the atc-file, the log file is created in the /Log folder.

Sample log:
```
>|10:28:30|PERIODSEND=60;
<|10:28:32|PERIODSEND=60;
!|10:28:32|CONF ACCEPTED
-----------
>|10:28:32|PERIODWR=10;
<|10:28:34|PERIODWR=10;
!|10:28:34|CONF ACCEPTED
-----------
```

The first line of the log consists of the command sent to the device (prefix «>»). The second line consists of the reply on the command received from the device (prefix «<»). The third line consists of result of checking the reply on matching the command (prefix «!»).

Commands must be typed using only the uppercase letters of Latin alphabet. If the command doesn't match with the required format, the device sends error message to the server. The server makes 5 attempts to send the configuration, then, in case of failure, the command is deleted.

REMOTE REQUEST OF DEVICE SETTINGS USING CONTROL COMMANDS

To request the settings, send the control commands with prefix 'G' (e.g. GPERIODWR to request data recording period specified in the device). Request of settings is available both via server and SMS.

Format of the request command via SMS:
```
password COMMAND;
```

• **password** – the 8-digit password used to provide the access to the device data on the server.
• **COMMAND** – request command (with the prefix 'G') supported by the AutoGRAPH device.

Format of the request command via data server:
```
COMMAND;
```

• **COMMAND** – request command (with the prefix 'G').

Some control commands can't be used to request device settings. For more detailed information on request of device settings using the control commands, see description of the commands.

DATA REQUEST AND RESET COMMANDS

GET − current position request

Command	GET
Description	Request of asset current position and movement direction
Supported with firmware	4.0 and higher
Setting	Available via data server or SMS.
Comment	The command is intended to request an asset current coordinates and movement direction. After processing the command, the device will send message with current coordinates. If the current position data is unavailable, the device will send the latest available coordinates. If there is no available position data, an empty reply will be sent. Depending on device settings, the coordinate data can be sent as a link to internet map or in the form of longitude and latitude values (the AutoGRAPH format). The device supports following internet maps: Yandex map, Yandex Satellite, Google map, Google Satellite. By default coordinates are sent in the AutoGRAPH format.

COMMAND FORMAT
1. GET password;
2. Password GET;

AutoGRAPH-GSM devices with firmware of version 5.0 and lower support only format 1– "GET password".

SAMPLE COMMAND
• via SMS:
```
1234zxcv GET;
```

• via server:
```
GET;
```

SAMPLE REPLY
• on SMS command:
link to internet map:
(1)   (2)   (3)   (4)
```
52500()#2012.05.23 08:00:23 GMT http://maps.google.com/maps?q=
N55.179161+E61.357631&t=m;
```

parameters:
(1) **52500** – device serial number;
(2) **2012.05.23** – date of last position acquisition (or last available position data) in the format – YYYY.MM.HH;

(3) **08:03:23 GMT** – time of last position acquisition (GMT time) in the format – HH:MM:SS;
(4) **http://maps.google...** – link to internet map.

in the AutoGRAPH format:

```
 (1)              (2)             (3)      (4)   (5)     (6)        (7)  (8)    (9)       (10)
52500()#092516.000,A,4805.8021,N,01132.2243,E,1.9,183.8,220709;
```

parameters:
(1) **52500** – device serial number;
(2) **092516.000** – time of last position acquisition (UTM time) – 9:25:16 000 milliseconds;
(3) **A** – coordinates are valid (if coordinates are invalid the flag V is sent);
(4) **4805.8021** – latitude (48 degrees 05.8021 minutes);
(5) **N** – northern latitude (or S if southern);
(6) **01132.2243** – longitude (011 degrees 32.224 minutes);
(7) **E** – eastern longitude (или W – western);
(8) **1.9** – velocity in knots (1 knot is equal to 1.8 km/h);
(9) **183.8** – movement direction, in degrees from north line.
(10) **220709** – date (DDMMYY – 22 July 2009 year);

• on command via server:
link to internet map:

```
2012.05.23 08:30:52 GMT http://maps.google.com/maps?q=N55.179255+E6
1.357706&t=m;
```

in the AutoGRAPH format:

```
94723.0,A,5510.75190,N,6121.45970,E,0.02,0.00,230512;
```

GARMIN – current position request in Garmin format

Command	GARMIN
Description	Request of asset current position in Garmin format
Supported with firmware	7.3 and higher
Setting	Available only via SMS
Comment	The command is intended to request an asset current coordinates in Garmin format.

COMMAND FORMAT

password GARMIN;

SAMPLE COMMAND

`1234zxcv GARMIN;`

SAMPLE REPLY

```
        (1)         (2)                     (3)             (4)             (5)
<GarminLoc>52500<N><C>N 55.179241 E 61.357735 <G>20100001;
```

parameters:

(1) <GarminLoc> – coordinates format (Garmin);

(2) 52500< N> – device serial number;

(3) N 55.179241 – latitude, N – north (S – south);

(4) E 61.357735 – longitude, E – east (W – west);

(5) <G>20100001 – service information.

NAVITEL – current position request in Garmin format

Command	NAVITEL
Description	Request of asset current position in Navitel format
Supported with firmware	7.3 and higher
Setting	Available only via SMS
Comment	The command is intended to request an asset current coordinates in Navitel format.

COMMAND FORMAT

password NAVITEL;

SAMPLE COMMAND

```
1234zxcv NAVITEL;
```

SAMPLE REPLY

```
      (1)           (2)            (3)            (4)
<NavitelLoc>N55.179188 E61.357674 <N>52500;
```

parameters:
(1) <NavitelLoc> – coordinates format (Navitel);
(2) N 55.179241 – latitude, N – north (S – south);
(3) E 61.357735 – longitude, E – east (W – west);
(4) < N>52500 – device serial number;

GCHANGE − last configuration details

Command	GCHANGE
Description	Information on last configuration
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to request information about device last configuration using remote commands.

COMMAND FORMAT
password GCHANGE;

REPLY FORMAT
serial()#TELCHANGE=phone;DATECHANGE=date;TIMECHANGE=time;

parameters:
• **serial** – device serial number;
• **phone** – phone number used to send configuration to the devices previously;
• **date** – date of last configuration;
• **time** – time of last configuration.

SAMPLE COMMAND
• via SMS:
```
1234zxcv GCHANGE;
```

• via server:
```
GCHANGE;
```

SAMPLE REPLY
• on SMS command:
```
52500()#TELCHANGE=+79005554433;DATECHANGE=14.02.2011;TIMECHANGE=
15:30:00;
```

• on command via server:
```
TELCHANGE=+79005554433;DATECHANGE=14.02.2011;TIMECHANGE=15:30:00;
```

Device configuration was changed previously on 2011 February, 14 at 15:30:00 (3:30:00 pm). The configuration was sent from number +79005554433.

USSD – SIM balance request

Command	USSD
Description	SIM balance request
Supported with firmware	4.0 and higher
Setting	Available only via SMS
Comment	The command is intended to request balance of device SIM.

COMMAND FORMAT

USSD password "request";

parameters:
• **request** – USSD request code.

SAMPLE COMMAND

```
USSD 123zxcv "*104#";
```

SAMPLE REPLY

```
52500#ussd:25.18;
```

Device active SIM balance is 25.18 ($).

IMPORTANT	*The USSD command must be sent to that device SIM card which balance is necessary to check.*

GVERSION − firmware version request

Command	GVERSION
Description	Firmware version request
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to request the device firmware version.

COMMAND FORMAT

password GVERSION;

REPLY FORMAT

VERSION=version;

parameters:
• **version** – firmware version.

SAMPLE COMMAND

• via SMS:
```
1234zxcv GVERSION;
```

• via server:
```
GVERSION;
```

SAMPLE REPLY

• on SMS command:
```
52500()#VERSION=AGTK-9.67;
```

• on command via server:
```
VERSION=AGTK-9.67;
```

Device firmware version is AGTK-9.67.

GIMEI – IMEI request

Command	GIMEI
Description	GSM modem IMEI request
Supported with firmware	9.71 and higher
Setting	Available via server and SMS
Comment	The command is intended to request IMEI of device GSM modem.

COMMAND FORMAT

password GIMEI;

SAMPLE COMMAND

• via SMS:
```
1234zxcv GIMEI;
```

• via server:
```
GIMEI;
```

SAMPLE REPLY

• on SMS command:
```
52500()#IMEI=353469041718511;
```

• on command via server:
```
IMEI=353469041718511;
```

IMEI of device GSM modem is 353469041718511.

GACCELERATE – accelerometer readings request

Command	GACCELERATE
Description	Accelerometer readings request
Supported with firmware	9.71 and higher
Setting	Available via server and SMS
Comment	The command is intended to request device accelerometer readings. This command is used to troubleshoot device accelerometer.

COMMAND FORMAT

password GACCELERATE;

REPLY FORMAT

ACCELERATE=ax,ay,az,mod;

parameters:
- **ax** – X-acceleration;
- **ay** – Y-acceleration;
- **az** – Z-acceleration;
- **mod** – square of resulting acceleration in g/64.

SAMPLE COMMAND
- via SMS:
```
1234zxcv GACCELERATE;
```

- via server:
```
GACCELERATE;
```

SAMPLE REPLY
- on SMS command:
```
52500()#ACCELERATE=-1,2,1,6;
```

- on command via server:
```
ACCELERATE=0,-1,0,2;
```

The device 52500 has sent following acceleration data: ax=-1, ay=2, az=1, square of resulting acceleration – 6.

GGSMSTAGE – active SIM request

Command	GGSMSTAGE
Description	Device active SIM request
Supported with firmware	9.71 and higher
Setting	Available via server and SMS
Comment	The command is intended to request a number of device SIM which is currently active. In addition, the command provides GSM modem status check. This information can be useful to troubleshoot the device.

COMMAND FORMAT

password GGSMSTAGE;

COMMAND FORMAT

GSMSTAGE=param1,param2,param3,param4,param5;

parameters:
- **param1** – maximum GSM modem progress of operation, achieved from previous device reset. The device can be reset by power, remote RESET command or once a day. Also the device resets when GSM modem shuts down:

  0 – modem is turned off;

  1 – modem power is ON;

  2 – modem operates correctly;

  3 – PIN code is entered;

  4 – GSM (GPRS) settings are applied;

  5 – modem is connected to GSM network;

  6 – GPRS is available;

  7 – modem is connected to GPRS;

  8 – the device is connected to data server;

  9 – data is sent to server, waiting for acknowledgment from server;

  10 – acknowledgment is received, data transmission is completed.

If an error occurred while checking GSM modem, the device will send the error code. GSM modem errors are described below.

- **param2** – device active SIM number:

  0 – main (first) SIM is active currently;

  1 – backup (second) SIM is active currently.

- **param3** – current state of GSM modem.

  0 – modem is turned off;

  1 – modem power is ON;

2 – modem operates correctly;

3 – PIN code is entered;

4 – GSM (GPRS) settings are applied;

5 – modem is connected to GSM network;

6 – GPRS is available;

7 – modem is connected to GPRS;

8 – the device is connected to data server;

9 – data is sent to server, waiting for acknowledgment from server;

10 – acknowledgment is received, data transmission is completed.

If an error occurred while checking GSM modem, the device will send the error code. GSM modem errors are described below.

In normal mode, GSM modem state is 8 – the device is connected to data server. If the modem stays in other state for a long time and does not switch to next operation step, it is recommended to check device SIM cards, services provided by SIM cards, GSM-modem and the modem power driver.

- **param4** – GSM signal level:

  0 – (-133) dBm and lower;

  1 – (-111) dBm;

  2...30 – (-109) dBm...(-53) dBm / in increments of 2 dBm;

  31 – (-51) dBm and higher;

  99 – unable to determine signal level;

- **param5** – error level in GSM network:

  0 – less than 0.2%

  1 – from 0.2 % to 0.4%

  2 – from 0.4% to 0.8%

  3 – from 0.8% to 1.6%

  4 – from 1.6% to 3.2%

  5 – from 3.2% to 6.4%

  6 – from 6.4% to 12.8%

  7 – more than 12.8%

  99 – unable to determine error level.

In case of error an error code is sent in the *param1* and *param3* fields:

 65536 "Bad modem power"

65537 "Modem power monitor failure"

65538 "No response from modem on commands"

65539 "SIM not inserted"

65540 "An error occurred when entering PIN"

65541 "SIM PUK required"

65542 "Unknown SIM error"

65543 "Data transmission required, but no data is transmitted for a long time"

65544 "No transmission capability for a long time"

65545 "Unable to connect to GSM network"

65546 "No GPRS network status for a long time"

65547 "Multiple GPRS enabling error"

65548 "Multiple error of connection to server"

65549 "No connection to server for a long time"

65550 "Connected to server is established, but no data is being transferred"

65551 "Data transmission with current mobile operator not allowed (by GSM network priority settings)

65552 "Device not serviced by server"

65553 "Device password does not match password required by server"

....

NOTE

Param3, param4, param5 fields in the response to GSMSTAGE command are supported by firmware of versions AGTK-10.63, AGXL-11.45 and higher. If firmware version of the AutoGRAPH controller is lower than the required one, the device sends only param1 and param2 in response.

....

SAMPLE COMMAND

• via SMS:

```
1234zxcv GGSMSTAGE;
```

• via server:

```
GGSMSTAGE;
```

SAMPLE REPLY

• on SMS command:

If device firmware version is lower than AGTK-10.63 or AGXL-11.45.

```
52500()#GSMSTAGE=6,1
```

If device firmware version is AGTK-10.63 or AGXL-11.45 and higher.

```
52500()#GSMSTAGE=10,1,8,3,2
```

• on command via server:

If device firmware version is lower than AGTK-10.63 or AGXL-11.45.

```
GSMSTAGE=6,1;
```

If device firmware version is AGTK-10.63 or AGXL-11.45 and higher.

```
GSMSTAGE=10,1,8,3,2;
```

The device 52500 is connected to second (backup) SIM, GSM modem status is 8 (connected to server), GSM signal level -111 dBm, network error level ranges from 0.4% to 0.8%, maximum GSM modem state – 10 (server acknowledgment is received, data transmission is completed).

GICCID – SIM ICCID request

Command	GICCID
Description	SIM ICCID request
Supported with firmware	9.71 and higher
Setting	Available via server and SMS
Comment	The command is intended to request device SIM ICCID.

COMMAND FORMAT

password GICCID;

SAMPLE COMMAND

• via SMS:
```
1234zxcv GICCID;
```

• via server:
```
GICCID;
```

SAMPLE REPLY

• on SMS command:
```
52500()#ICCID=8970139905014820856;
```

• on command via server:
```
ICCID=8970139905013104344;
```

The device 52500 SIM ICCID – 8970139905014820856.

DATASEND – send data to server

Command	DATASEND
Description	Command to send data to server
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to force the device to send data to server not waiting next data transmission period.

COMMAND FORMAT

password DATASEND;

SAMPLE COMMAND

• via SMS:

```
1234zxcv DATASEND;
```

• via server:

```
DATASEND;
```

SAMPLE REPLY

• on SMS command:

```
52500()#DATASEND;
```

• on command via server:

```
DATASEND;
```

The device 52500 has sent data to server.

GWIFISTAGE – WiFi modem state

Command	GWIFISTAGE
Description	WiFi modem operation state
Supported with firmware	11.41 and higher
Setting	Available via server and SMS
Comment	The command is intended to request current state of WiFi modem. The command is useful to troubleshoot WiFi modem.

COMMAND FORMAT

password GWIFISTAGE;

COMMAND FORMAT

WIFISTAGE=cur_stage,max_stage;

parameters:
- **cur_stage** – current state of WiFi modem;
- **max_stage** – maximum WiFi modem progress of operation, achieved from previous device reset. The device can be reset by power, remote RESET command or once a day.

WiFi modem states:

0 – modem is turned off;

1 – modem power is on;

2 – modem is turned on;

3 – settings application;

4 –connecting to network;

5 – connected to network;

6 – connecting to server;

7 – connected to server;

8 – data is transmitted;

9 – receiving acknowledgment;

10 – acknowledgement received,

SAMPLE COMMAND

• via SMS:

```
1234zxcv GWIFISTAGE;
```

• via server:

```
GWIFISTAGE;
```

SAMPLE REPLY

• on SMS command:
```
52500()#WIFISTAGE=8,10;
```

• on command via server:
```
WIFISTAGE=8,10;
```

The device 52500 has sent data to server via WiFi, maximum modem status is 10 (device received acknowledgment from server).

RESET – hardware reset

Command	RESET
Description	Hardware reset
Supported with firmware	4.0 and higher
Setting	Available only via SMS
Comment	The command is intended to make hardware reset.

COMMAND FORMAT

RESET password;

SAMPLE COMMAND

```
RESET 1234zxcv;
```

SAMPLE REPLY

```
52500()#RESET;
```

Completed hardware reset of the AutoGRAPH device with serial number 52500.

GSM / GPRS SETTINGS

ALIAS – device name

Command	ALIAS
Description	Device alias
Request command	GALIAS
Supported with firmware	9.67 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up the device alias, which is sent in device outgoing messages in order to identify the device.

COMMAND FORMAT

password ALIAS=alias;

parameters:
- **alias** – device alias. Alias can be not more than 8 characters long, contain only letters of Latin alphabet (lowercase and uppercase) and figures from 0 to 9.

SAMPLE COMMAND

- via SMS:
```
1234zxcv ALIAS=Kamaz;
```

- via server:
```
ALIAS=Kamaz;
```

SAMPLE REPLY

- on SMS command:
```
52500(Kamaz)#ALIAS=Kamaz;
```

- on command via server:
```
ALIAS=Kamaz;
```

The device 52500 has alias "Kamaz".

TELNUM – device main SIM number

Command	TELNUM
Description	Device main SIM number
Request command	GTELNUM
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up number of the device main SIM card.

COMMAND FORMAT

password TELNUM=phone;

parameters:
- **phone** – main SIM number. Phone number must be specified without spaces and with prefix of national call (e.g. +7).

SAMPLE COMMAND

- via SMS:
```
1234zxcv TELNUM=+79001111111;
```

- via server:
```
TELNUM=+79001111111;
```

SAMPLE REPLY

- on SMS command:
```
52500()#GPRS:TELNUM=+79001111111;
```

- on command via server:
```
TELNUM=+79001111111;
```

The device 52500 main SIM number is +79001111111.

APNFULL – main SIM APN settings

Command	APNFULL
Description	Main SIM APN settings
Request command	GAPNFULL
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up APN settings of device main SIM. APN details can be obtained from mobile operator official web site or when purchasing SIM card.

COMMAND FORMAT

password APNFULL="apnname","apnuser","apnpassword";

parameters:
- **apnname** – APN domain name;
- **apnuser** – APN user name;
- **apnpassword** – APN access password.

SAMPLE COMMAND

• via SMS:
```
1234zxcv APNFULL="internet.usi.ru","","";
```

• via server:
```
APNFULL="internet.usi.ru","","";
```

SAMPLE REPLY

• on SMS command:
```
52500()#APNFULL="internet.usi.ru","","";
```

• on command via server:
```
APNFULL="internet.usi.ru","","";
```

Following APN settings are specified in the device: APN name – internet.usi.ru, APN user name and password are not specified.

PIN – main SIM PIN

Command	PIN
Description	Device main SIM PIN
Request command	GPIN
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up main SIM PIN code and protect it from reading.

COMMAND FORMAT

• *PIN setup without protection:*
password PIN=pin;

• *PIN setup and protecting it from reading. Pin protection from reading is supported by AutoGRAPH controllers with firmware of version AGXL-11.43 and higher:*
password PIN=pin,1;

parameters:
• **pin** – main SIM PIN;

SAMPLE COMMAND

• via SMS:
```
1234zxcv PIN=3456,1;
```

• via server:
```
PIN=3456,1;
```

SAMPLE REPLY

• on SMS command:
```
52500()#PIN=3456,1;
```

• on command via server:
```
PIN=3456,1;
```

The device 52500 main SIM PIN is 3456, PIN is protected from reading.
If PIN is protected from reading, the AutoGRAPH device will send reply *PIN=****;* when trying to read PIN using *GPIN* command.

PERIODSEND – main SIM data transmission period

Command	PERIODSEND
Description	Main SIM data transmission period
Request command	GPERIODSEND
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up period of data transmission to server when device operates with main SIM.

COMMAND FORMAT

password PERIODSEND=time;

parameters:
- **time** – data transmission period of main SIM. The period must be specified in seconds and ranges from 10 to 43200 seconds, 0 period disables periodical transmission and allows data transmission only by call to SIM number, the device digital input triggering or by command *"DATASEND"*.

SAMPLE COMMAND

- via SMS:
```
1234zxcv PERIODSEND=60;
```

- via server:
```
PERIODSEND=60;
```

SAMPLE REPLY

- on SMS command:
```
52500()#PERIODSEND=60;
```

- on command via server:
```
PERIODSEND=60;
```

The device 52500 sends data to server every 60 seconds when operates with main SIM.

APNROAMING – main SIM APN settings in roaming

Command	APNROAMING
Description	Main SIM APN settings in roaming
Request command	GAPNROAMING
Supported with firmware	7.2 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up APN settings of main SIM when device is connected to roaming GSM network.

COMMAND FORMAT

password APNROAMING="apn","apnuser","apnpassword";

parameters:
• **apnname** – APN domain name;
• **apnuser** – APN user name;
• **apnpassword** – APN access password.

SAMPLE COMMAND
• via SMS:
```
1234zxcv APNROAMING="internet.usi.ru","","";
```

• via server:
```
APNROAMING="internet.usi.ru
```

SAMPLE REPLY
• on SMS command:
```
52500()#APNROAMING="internet.usi.ru","","";
```

• on command via server:
```
APNROAMING="internet.usi.ru","","";
```

Following roaming APN settings are specified in the device for main SIM : APN name – internet.usi.ru, APN user name and password are not specified.

ROAMINGMODE – traffic saving mode in roaming

Command	APNROAMING
Description	Traffic saving mode in roaming
Request command	GAPNROAMING
Supported with firmware	5.6 and higher
Setting	Available via server and SMS
Comment	The command is intended to enable economy mode providing saving of GPRS traffic when the device is registered in roaming network. In this mode the device sends data to server with a period different from main data transmission period when it is connected to roaming network. Also in this mode the device closes GPRS connection immediately after data transmission, when the device is in roaming.

COMMAND FORMAT

password ROAMINGMODE=status;

parameters:
- **status** – saving mode in roaming:
  R – enables saving mode;
  N – disables saving mode. When the traffic saving mode is disabled, data is sent to server with the same period in roaming and when the device is connected to home network.

SAMPLE COMMAND
- via SMS:
```
1234zxcv ROAMINGMODE=R;
```

- via server:
```
ROAMINGMODE=R;
```

SAMPLE REPLY
- on SMS command:
```
52500()#ROAMINGMODE=R;
```

- on command via server:
```
ROAMINGMODE=R;
```

Traffic saving mode in roaming is enabled in the device 52500.

PERIODROAMING – main SIM data transmission period in roaming

Command	PERIODROAMING
Description	Main SIM data transmission period in roaming
Request command	GPERIODROAMING
Supported with firmware	5.6 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up period of data transmission to server for main SIM when device is connected to roaming network.

COMMAND FORMAT

password PERIODROAMING=period;

parameters:
• **period** – data transmission period of main SIM when device is connected to roaming network. The period must be specified in seconds and ranges from 30 to 43200 seconds, 0 period disables periodical transmission and allows data transmission only by call to SIM number or by command *"DATASEND"*.

SAMPLE COMMAND

• via SMS:
```
1234zxcv PERIODROAMING=0;
```

• via server:
```
PERIODROAMING=0;
```

SAMPLE REPLY

• on SMS command:
```
52500()#GPRS:PERIODROAMING=0;
```

• on command via server:
```
PERIODROAMING=0;
```

Data transmission in roaming is disabled in the device 52500.

IMPORTANT *Data transmission in roaming is provided with the specified period only if traffic saving mode in roaming is enabled. Otherwise, data is sent with similar period both in roaming and when the device is connected to home network.*

SIM2TELNUM − device backup SIM number

Command	SIM2TELNUM
Description	Device backup SIM number
Request command	GSIM2TELNUM
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up number of the device backup SIM card.

COMMAND FORMAT

password SIM2TELNUM=number;

parameters:
- **phone** – backup SIM number. Phone number must be specified without spaces and with prefix of national call (e.g. +7).

SAMPLE COMMAND
- via SMS:
```
1234zxcv SIM2TELNUM=89000000000;
```

- via server:
```
SIM2TELNUM=89000000000;
```

SAMPLE REPLY
- on SMS command:
```
52500()#SIM2TELNUM=89000000000;
```

- on command via server:
```
SIM2TELNUM=89000000000;
```

The device 52500 backup SIM number is +79000000000.

SIM2PIN – backup SIM PIN

Command	SIM2PIN
Description	Device main SIM PIN
Request command	GSIM2PIN
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up backup SIM PIN code and protect it from reading.

COMMAND FORMAT

• *PIN setup without protection:*
password SIM2PIN=pin2;

• *PIN setup and protecting from reading. Pin protection from reading is supported by AutoGRAPH controllers with firmware of version AGXL-11.43 and higher:*
password SIM2PIN=pin2,1;

parameters:
• **pin2** – backup SIM PIN;

SAMPLE COMMAND

• via SMS:
```
1234zxcv SIM2PIN=1111;
```

• via server:
```
SIM2PIN=1111;
```

SAMPLE REPLY

• on SMS command:
```
52500()#SIM2PIN=1111;
```

• on command via server:
```
SIM2PIN=1111;
```

The device 52500 backup SIM PIN is 1111, PIN is not protected from reading.
If PIN is protected from reading, the AutoGRAPH device will send the reply *SIM2PIN=****;* when trying to read PIN using *GSIM2PIN* command.

SIM2PERIODSEND – backup SIM data transmission period

Command	SIM2PERIODSEND
Description	Backup SIM data transmission period
Request command	GSIM2PERIODSEND
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up period of data transmission to server when device operates with backup SIM.

COMMAND FORMAT

password SIM2PERIODSEND=period;

parameters:
- **period** – data transmission period of backup SIM. The period must be specified in seconds and ranges from 10 to 43200 seconds, 0 period disables periodical transmission and allows data transmission only by call to SIM number, digital input triggering or by "DATASEND" command.

SAMPLE COMMAND
- via SMS:
```
1234zxcv SIM2PERIODSEND=3600;
```

- via server:
```
SIM2PERIODSEND=3600;
```

SAMPLE REPLY
- on SMS command:
```
52500()#SIM2PERIODSEND=3600;
```

- on command via server:
```
SIM2PERIODSEND=3600;
```

The device 52500 sends data to server every 3600 seconds when operates with backup SIM.

SIM2APNFULL – backup SIM APN settings

Command	SIM2APNFULL
Description	Backup SIM APN settings
Request command	GSIM2APNFULL
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up APN settings of the device backup SIM. APN details can be obtained from mobile operator official web site or when purchasing SIM card.

COMMAND FORMAT

password SIM2APNFULL="apn","apnuser","apnpassword";

parameters:
• **apnname** – APN domain name;
• **apnuser** – APN user name;
• **apnpassword** – APN access password.

SAMPLE COMMAND
• via SMS:
```
1234zxcv SIM2APNFULL="internet.usi.ru","","";
```

• via server:
```
SIM2APNFULL="internet.usi.ru","","";
```

SAMPLE REPLY
• on SMS command:
```
52500()#SIM2APNFULL="internet.usi.ru","","";
```

• on command via server:
```
SIM2APNFULL="internet.usi.ru","","";
```

Following APN settings of backup SIM are specified in the device: APN name – internet.usi.ru, APN user name and password are not specified.

SIM2APNROAMING – backup SIM APN settings in roaming

Command	SIM2APNROAMING
Description	Backup SIM APN settings in roaming
Request command	GSIM2APNROAMING
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up APN settings of backup SIM which will be used when the device is connected to roaming GSM network.

COMMAND FORMAT

password SIM2APMROAMING="apn","apnuser","apnpassword";

parameters:
• **apnname** – APN domain name;
• **apnuser** – APN user name;
• **apnpassword** – APN access password.

SAMPLE COMMAND

• via SMS:

`1234zxcv SIM2APNROAMING="internet.usi.ru","","";`

• via server:

`SIM2APNROAMING="internet.usi.ru","","";`

SAMPLE REPLY

• on SMS command:

`52500()#SIM2APNROAMING="internet.usi.ru","","";`

• on command via server:

`SIM2APNROAMING="internet.usi.ru","","";`

Following roaming APN settings are specified in the device for backup SIM : APN name – internet.usi.ru, APN user name and password are not specified.

SIM2ROAMINGMODE – traffic saving mode in roaming of backup SIM

Command	SIM2ROAMINGMODE
Description	Traffic saving mode in roaming of backup SIM
Request command	GSIM2ROAMINGMODE
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to enable economy mode providing saving of GPRS traffic when the device is registered in roaming network using backup SIM. In this mode the device sends data to server with a period different from main data transmission period when it is connected to roaming network. Also in this mode the device closes GPRS connection immediately after data transmission, when the device is in roaming.

COMMAND FORMAT

password SIM2ROAMINGMODE=mode;

parameters:
• **mode** – saving mode in roaming:
  R – enables saving mode;
  N – disables saving mode. When the traffic saving mode is disabled, data is sent to server with the same period in roaming and when the device is connected to home network.

SAMPLE COMMAND
• via SMS:
```
1234zxcv SIM2ROAMINGMODE=R;
```

• via server:
```
SIM2ROAMINGMODE=R;
```

SAMPLE REPLY
• on SMS command:
```
52500()#SIM2ROAMINGMODE=R;
```

• on command via server:
```
SIM2ROAMINGMODE=R;
```

Traffic saving mode in roaming for backup SIM is enabled in the device 52500.

SIM2PERIODROAMING − backup SIM data transmission period in roaming

Command	SIM2PERIODROAMING
Description	Backup SIM data transmission period in roaming
Request command	GSIM2PERIODROAMING
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up period of data transmission to server for backup SIM when device is connected to roaming network.

COMMAND FORMAT

password SIM2PERIODROAMING=period;

parameters:
- **period** – data transmission period of backup SIM when device is connected to roaming network. The period must be specified in seconds and ranges from 30 to 43200 seconds, 0 period disables periodical transmission and allows data transmission only by call to SIM number, input triggering or command DATASEND.

SAMPLE COMMAND

- via SMS:
```
1234zxcv SIM2PERIODROAMING=120;
```

- via server:
```
SIM2PERIODROAMING=120;
```

SAMPLE REPLY

- on SMS command:
```
52500()#SIM2PERIODROAMING=120;
```

- on command via server:
```
SIM2PERIODROAMING=120;
```

Data transmission in roaming for backup SIM is 120 seconds.

IMPORTANT

Data transmission in roaming is provided with the specified period only if traffic save mode in roaming is enabled. Otherwise, data is sent with similar period both in roaming and when the device is connected to home network.

SMS FROM DEVICE

MESSAGE – SMS from device

Command	MESSAGE
Description	Send SMS to specified phone number
Supported with firmware	10.40 and higher
Setting	Available via server and SMS
Comment	The command is intended to send SMS from AutoGRAPH device to specified phone number with specified text.

COMMAND FORMAT

password MESSAGE=001,tel_number:message;

parameters:
- **tel_number** – phone number which the device will sent SMS after processing the command. The number must be specified without spaces and with prefix "+";
- **message** – message text which will be sent to the specified phone number. The text can contain up to 250 characters.

SAMPLE COMMAND

• via SMS:
```
1234zxcv MESSAGE=001,+79507776688:Hello world!;
```

• via server:
```
MESSAGE=001,+79507776688:Hello world!;
```

SAMPLE REPLY

• on SMS command:
```
52500()#MESSAGE=001,+79507776688:Hello world!;
```

• on command via server:
```
MESSAGE=001,+79507776688:Hello world!;
```

The command to send SMS with text "Hello world!" to the number +79507776688 is sent to the device 52500.

WiFi SETTINGS

WIFISSID – WiFi network name

Command	WIFISSID
Description	WiFi network name
Request command	GWIFISSID
Supported with firmware	11.41 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up WiFi network name which is used to send data to server.

COMMAND FORMAT

password WIFISSID=ssid;

parameters:
• **ssid** – WiFi network name. The name can contain only letters of Latin alphabet.

SAMPLE COMMAND

• via SMS:
```
1234zxcv WIFISSID=AutoGRAPH;
```

• via server:
```
WIFISSID=AutoGRAPH;
```

SAMPLE REPLY

• on SMS command:
```
52500()#WIFISSID=AutoGRAPH;
```

• on command via server:
```
WIFISSID=AutoGRAPH;
```

The device 52500 is configured to connect to WiFi network AutoGRAPH to send data to server.

WIFIKEY − WiFi network password

Command	WIFIKEY
Description	WiFi network password
Request command	GWIFIKEY
Supported with firmware	11.41 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up password used to connect to WiFi network.

COMMAND FORMAT

password WIFIKEY=key;

parameters:
- **key** – WiFi network password. The password can contain only ASCII characters. The password length depends on the selected encryption type: 8 or 13 characters for WEP, up to 32 characters for WPA and WPA2. Password must not be in HEX format for WEB encryption.

SAMPLE COMMAND
- via SMS:
```
1234zxcv WIFIKEY=qsefthuk;
```

- via server:
```
WIFIKEY=qsefthuk;
```

SAMPLE REPLY
- on SMS command:
```
52500()#WIFIKEY=qsefthuk;
```

- on command via server:
```
WIFIKEY=qsefthuk;
```

Password *qsefthuk* is specified in the device 52500 to provide access to WiFi network.

WIFIPERIODSEND – data transmission period via WiFi

Command	WIFIPERIODSEND
Description	Data transmission period via WiFi
Request command	GWIFIPERIODSEND
Supported with firmware	11.41 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up period of data transmission to server via WiFi network.

COMMAND FORMAT

password WIFIPERIODSEND=period;

parameters:
• **period** – data transmission period via WiFi. The period must be specified in seconds.

SAMPLE COMMAND

• via SMS:
```
1234zxcv WIFIPERIODSEND=120;
```

• via server:
```
WIFIPERIODSEND=120;
```

SAMPLE REPLY

• on SMS command:
```
52500()#WIFIPERIODSEND=120;
```

• on command via server:
```
WIFIPERIODSEND=120;
```

The device 52500 sends data to server via WiFi network every 52500 seconds.

WIFICONF – WiFi network settings

Command	WIFICONF
Description	WiFi network settings
Request command	GWIFICONF
Supported with firmware	11.41 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up WiFi network settings such as network encryption type, IP address, channel number and etc.

COMMAND FORMAT

password WIFICONF=p1,p2,p3,p4,p5:p6:p7:p8:p9:p10;

parameters:
- **p1** – IP address:
    - 0 – use IP settings specified in fields p6-p9 of the command;
    - 1 – get IP address automatically.
- **p2** – network authentication (available only for WEP encryption):
    - 0 – open network;
    - 1 – shared network.
- **p3** – wireless mode:
    - 0 – Ad Hoc;
    - 1 – Infrastructure (default).
- **p4** – data encryption type:
    - 0 – no encryption;
    - 1 – WEP;
    - 2 – WPA;
    - 3 – WPA2.
- **p5** – channel:
    - 0 – Auto. This settings allows data transmission via any available channel. In AutoGRAPH devices channel selection is not available. By default the Auto selection is set.
- **p6** – device IP address;
- **p7** – subnet mask;
- **p8** – gateway;
- **p9** – DNS-server address;
- **p10** – connect to any open WiFi network:
    - 0 – disabled;
    - 1 – enabled.

> **IMPORTANT**
>
> *Enabling connection to any open WiFi network, you are to understand that using of unknown open networks provides high risk of confidential information and data loss.*

SAMPLE COMMAND

• via SMS:

```
1234zxcv WIFICONF=1,1,1,1,0:255.255.255.255:255.255.255.255:255.
255.255.255:255.255.255.255:0;
```

• via server:

```
WIFICONF=1,1,1,1,0:255.255.255.255:255.255.255.255:255.255.255.
255:255.255.255.255:0;
```

SAMPLE REPLY

• on SMS command:

```
52500()#WIFICONF=1,1,1,1,0:255.255.255.255:255.255.255.255:255.
255.255.255:255.255.255.255:0;
```

• on command via server:

```
WIFICONF=1,1,1,1,0:255.255.255.255:255.255.255.255:255.255.255.
255:255.255.255.255:0;
```

The device 52500 has following WiFi network settings:

p1: 1 – IP address is obtained automatically.

p2: 1 – shared authentication.

p3: 1 – wireless mode – Infrastructure.

p4: 3 – encryption type – WEP.

p5: 0 – channel option – auto selection.

p6-p9: IP settings. IP address provided automatically, so p6-p9 field can be empty.

p10: 0 – connection to any open Wi-Fi network is disabled.

DATA RECORDING SETTINGS

PERIODWR – position data recording period (interval)

Command	PERIODWR
Description	Position data recording period (interval)
Request command	GPERIODWR
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up period (or interval) of position data recording in internal memory. When data is recorded in adaptive mode, the command sets a recording interval. When data is recorded at regular time, the command sets a recording period.

COMMAND FORMAT

password PERIODWR=period;

parameters:
- **period** – data recording period (interval). The period can range from 1 to 600 seconds, the interval ranges from 1 to 600 meters.

SAMPLE COMMAND
- via SMS:
```
1234zxcv PERIODWR=10;
```

- via server:
```
PERIODWR=10;
```

SAMPLE REPLY
- on SMS command:
```
52500()#GPRS PERIODWR=10;
```

- on command via server:
```
PERIODWR=10;
```

The device 52500 records position data every 10 seconds.

MODEWR – position data recording mode

Command	MODEWR
Description	Position data recording mode
Request command	GMODEWR
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up mode of position data recording in internal memory.

COMMAND FORMAT

password MODEWR=mode;

parameters:
• **mode** – data recording mode:
  A – adaptive mode. In this mode data is recorded depending on vehicle motion characteristics such as speed, acceleration, and movement direction;
  N – at regular time. In this mode data is recorded with regular period independent from motion characteristics.

SAMPLE COMMAND

• via SMS:
```
1234zxcv MODEWR=A;
```

• via server:
```
MODEWR=A;
```

SAMPLE REPLY

• on SMS command:
```
52500()#MODEWR=A;
```

• on command via server:
```
MODEWR=A;
```

The device 52500 records position data every 10 seconds.

ADAPTIVESENS – adaptive mode sensitivity

Command	ADAPTIVESENS
Description	Adaptive mode sensitivity
Request command	GADAPTIVESENS
Supported with firmware	11.42 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up adaptive recording mode.

COMMAND FORMAT

password ADAPTIVESENS=sens;

parameters:
- **sens** – adaptive mode sensitivity. Minimal value is 0, maximum value is 250, default value is 100.
- when sens=100, position is recorded if vehicle has travelled distance more than the specified recording interval (in meters) and deviation of movement direction exceeds 6 degrees or vehicle speed has increased more than 5 knots (about 9 km/h).
- If simultaneous deviations of speed and movement direction occur, total deviation amounts to superposition of both deviations. It means that data will be recorded even if deviation of movement direction is 3 degrees (50%) and vehicle speed increased 6 km/h (60%) because total deviation (50%+60%=110%) exceeds sensitivity level (sens=100).
- Thresholds of deviations depend on the selected sensitivity, e.g. when sens=50, threshold of movement direction deviation is 3 degrees and threshold of speed deviation is 2.5 knots; when sens=200, threshold of movement direction deviation is 12 degrees and threshold of speed deviation is 10 knots.
- In addition to movement direction and speed, the device evaluates other movement characteristics and can make addition record if it is necessary. Additional records provide high accuracy of vehicle track.

SAMPLE COMMAND
- via SMS:
```
1234zxcv ADAPTIVESENS=80;
```

- via server:
```
ADAPTIVESENS=80;
```

SAMPLE REPLY
- on SMS command:
```
52500()#ADAPTIVESENS=80;
```

- on command via server:
```
ADAPTIVESENS=80;
```

Adaptive mode sensitivity of the device 52500 is 80. It means that data is recorded if vehicle passes distance more than the recording interval and deviation of movement direction is more than 5 degrees or speed deviation exceeds 8 km/h.

MODE1 – static filtering mode

Command	MODE1
Description	Static filtering mode
Request command	GMODE1
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to enable static filtering mode which intended to filter accidental movements at stops providing accurate track without throws. This mode is available only at vehicle stops.

COMMAND FORMAT

password MODE1=status;

parameters:
• **status** – static filtering mode:
   0 – enabled;
   1 – disabled.

SAMPLE COMMAND

• via SMS:
```
1234zxcv MODE1=0;
```

• via server:
```
MODE1=0;
```

SAMPLE REPLY

• on SMS command:
```
52500()#MODE1=0;
```

• on command via server:
```
MODE1=0;
```

Static filtering mode is enabled in the device 52500.

MODEWIDE − extended recording

Command	MODEWIDE
Description	Extended recording mode
Request command	GMODEWIDE
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to enable extended recording mode providing recording of motion vector and altitude.

COMMAND FORMAT

password MODEWIDE=status;

parameters:
- **status** – extended recording mode:
  0 – disabled;
  1 – enabled.

SAMPLE COMMAND

- via SMS:
`1234zxcv MODEWIDE=0;`

- via server:
`MODEWIDE=0;`

SAMPLE REPLY

- on SMS command:
`52500()#MODEWIDE=0;`

- on command via server:
`MODEWIDE=0;`

Extended recording mode is disabled in the device 52500.

MODETN – adding coordinates to level records

Command	MODETN
Description	Adding coordinates to level records
Request command	GMODETN
Supported with firmware	9.66 and higher
Setting	Available via server and SMS
Comment	The command is intended to enable recording of coordinates along with level data, e.g. fuel level. This mode is intended for data transmission to third party server.

COMMAND FORMAT

password MODETN=status;

parameters:
- **status** – coordinates recording along with level data:
  0 – disabled;
  1 – enabled.

SAMPLE COMMAND

- via SMS:
```
1234zxcv MODETN=1;
```

- via server:
```
MODETN=1;
```

SAMPLE REPLY

- on SMS command:
```
52500()#MODETN=1;
```

- on command via server:
```
MODETN=1;
```

Coordinates recording along with level data is enabled in the device 52500.

⚠️ **IMPORTANT**   *Additional coordinates recording along with level data can increase GPRS traffic. Do not enable this mode if it is not necessary.*

FULLONLINE – full online mode

Command	FULLONLINE
Description	Full online mode
Request command	GFULLONLINE
Supported with firmware	9.66 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up full online mode enabling data transmission to server immediately after recording the data in internal memory. This mode provides that online data is always available on server.

COMMAND FORMAT

password FULLONLINE=status;

parameters:
• **status** – full online mode:
  0 – disabled;
  1 – enabled.

SAMPLE COMMAND

• via SMS:
```
1234zxcv FULLONLINE=0;
```

• via server:
```
FULLONLINE=0;
```

SAMPLE REPLY

• on SMS command:
```
52500()#FULLONLINE=0;
```

• on command via server:
```
FULLONLINE=0;
```

Full online mode is disabled in the device 52500.

IMPORTANT   *Full online mode considerably increases GPRS traffic. Do not enable this mode if it is not necessary.*

DISTANCE – distance calculation in device

Command	DISTANCE
Description	Distance calculation in device
Request command	GDISTANCE
Supported with firmware	9.92 and higher
Setting	Available via server and SMS
Comment	The command is intended to enable distance calculation and recording in the AutoGRAPH device. When the option is disabled, distance is not calculated in the device, it can be calculated in dispatch software.

COMMAND FORMAT

password DISTANCE=status;

parameters:
- **status** – distance calculation and recording in the device:
  0 – disabled;
  1 – enabled.

SAMPLE COMMAND

- via SMS:
`1234zxcv DISTANCE=1;`

- via server:
`DISTANCE=1;`

SAMPLE REPLY

- on SMS command:
`52500()#DISTANCE=1;`

- on command via server:
`DISTANCE=1;`

Distance calculation and recording is enabled in the device 52500.

P285 – "Order 285" mode

Command	P285
Description	"Order 285" mode
Request command	GP285
Supported with firmware	10.43 and higher
Setting	Available via server and SMS
Comment	The command is intended to enable the mode "Order 285". In this mode, when main power supply shuts down and device switches to backup power, it makes a record about main power shutdown, sends this information to data server and turns off in a minute.

COMMAND FORMAT

password P285=status;

parameters:
- **status** – "Order 285" mode:
  0 – disabled;
  1 – enabled.

SAMPLE COMMAND

- via SMS:
```
1234zxcv P285=1;
```

- via server:
```
P285=1;
```

SAMPLE REPLY

- on SMS command:
```
52500()#P285=1;
```

- on command via server:
```
P285=1;
```

"Order 285" mode is enabled in the device 52500.

COMPACT − pooling of records

Command	COMPACT
Description	Pooling of records
Request command	GCOMPACT
Supported with firmware	9.91 and higher
Setting	Available via server and SMS
Comment	The command is intended to enable pooling of device records. If there are pooled records, when the device records any parameter of the group, it will record the states of all other parameters of this group, as well as current coordinates of the vehicle.

COMMAND FORMAT

password COMPACT=0,data;

parameters:
- **0** – position data. This option is specified by default and can't be edited;
- **data** – all types of records which should be grouped. Types must be listed comma separated. Supported types of records are listed below:

  1 – Analog records;
  2 – Counters 1,2;
  3 – Counters 3,4;
  4 – Motion characteristics;
  5 – Counters 5,6;
  6 – 1Wire identification;
  7 – Counters 7,8;
  8 – LLS 1-4 records;
  9 – LLS 5-8 records;
  10 – CAN records;
  11 – MODBUS level sensors;

  15 – Events;
  36 – 1Wire temperature;
  38 – Inputs wider;
  39 – Filling PORT-3 (via RS-485);
  40 – Fuel consumption (via RS-485);
  42 – Passenger traffic (via RS-485);
  43 – Weight (or level) via RS-485;
  45 – Calculated fuel consumption (from CAN);
  57 – Other numeric parameters;
  58 – MODBUS configurable parameters;
  59 – Status of external display;

SAMPLE COMMAND
- via SMS:
```
1234zxcv COMPACT=0,5,7,8,9;
```

- via server:
```
COMPACT=0,5,7,8,9;
```

SAMPLE REPLY
- on SMS command:
```
52500()#COMPACT=0,5,7,8,9;
```

- on command via server:
```
COMPACT=0,5,7,8,9;
```

The device 52500 is configured to pool following records: 5, 7, 8, 9.

MinTrans / ERA

TID − device TID to send data to MinTrans server

Command	TID
Description	Device TID to send data to MinTrans server
Request command	GTID
Supported with firmware	10.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up device TID required to send data to MinTrans server. TID is used to identify the device by server.

COMMAND FORMAT

password TID=id;

parameters:
• **id** – device TID. By default TID is equal to the AutoGRAPH device serial number.

SAMPLE COMMAND

• via SMS:
```
1234zxcv TID=52500;
```

• via server:
```
TID=52500;
```

SAMPLE REPLY

• on SMS command:
```
52500()#TID=52500;
```

• on command via server:
```
TID=52500;
```

TID 52500 is assigned to the device 52500.

ALARM – alarm button settings

Command	ALARM
Description	Alarm button settings
Request command	GALARM
Supported with firmware	10.46 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up alarm button settings. When the AutoGRAPH device transfers data in MinTrans protocol, pressing the alarm button initiates data transmission by event 13 – activated alarm button.

COMMAND FORMAT

password ALARM=input,state;

parameters:
- **input** – number of digital input which alarm button is connected to – 1...8;
- **state** – digital input state corresponding alarm button pressing:

  0 – -Vin;

  1 – +Vin.

SAMPLE COMMAND

- via SMS:
```
1234zxcv ALARM=1,0;
```

- via server:
```
ALARM=1,0;
```

SAMPLE REPLY

- on SMS command:
```
52500()#ALARM=1,0;
```

- on command via server:
```
ALARM=1,0;
```

Alarm button is considered pressed if digital input 1 of the device 52500 is connected to -Vin.

DATA SERVER SETTINGS

IP – main server IP address

Command	IP
Description	Main server IP address
Request command	GIP
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up main server IP address which device transfers data to.

COMMAND FORMAT

password IP=ip;

parameters:
• **ip** – main server IP address. The server must have a real static IP address.

SAMPLE COMMAND

• via SMS:

```
1234zxcv IP=127.0.0.1;
```

• via server:

```
IP=127.0.0.1;
```

SAMPLE REPLY

• on SMS command:

```
52500()# IP=127.0.0.1;
```

• on command via server:

```
IP=127.0.0.1;
```

The device 52500 sends data to server 127.0.0.1.

MAINDOMAIN − main server domain name

Command	MAINDOMAIN
Description	Main server domain address
Request command	GMAINDOMAIN
Supported with firmware	7.30 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up main server domain name which device transfers data to.

COMMAND FORMAT

password MAINDOMAIN=domain;

parameters:
• **domain** – main server domain name.

SAMPLE COMMAND

• via SMS:
```
1234zxcv MAINDOMAIN=office.tk-chel.ru;
```

• via server:
```
MAINDOMAIN=office.tk-chel.ru;
```

SAMPLE REPLY

• on SMS command:
```
52500()#MAINDOMAIN=office.tk-chel.ru;
```

• on command via server:
```
MAINDOMAIN=office.tk-chel.ru;
```

The device 52500 sends data to server with domain name – office.tk-chel.ru.

PORT – main server port

Command	PORT
Description	Main server port
Request command	GPORT
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up main server port which the device sends data to.

COMMAND FORMAT

password PORT=port;

parameters:
• **port** – main server port number. Default port for AutoGRAPH server is 2225.

SAMPLE COMMAND

• via SMS:
```
1234zxcv PORT=2225;
```

• via server:
```
PORT=2225;
```

SAMPLE REPLY

• on SMS command:
```
52500()#GPRS:PORT=2225;
```

• on command via server:
```
PORT=2225;
```

The device 52500 sends data to server via port 2225.

MAINTRANSPORT – protocol of data transmission to main server

Command	MAINTRANSPORT
Description	Protocol of data transmission to main server
Request command	GMAINTRANSPORT
Supported with firmware	10.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up protocol of data transmission to main server.

COMMAND FORMAT

password MAINTRANSPORT=format;

parameters:
- **format** –data transmission protocol:

  0 – AutoGRAPH – closed AutoGRAPH protocol used to transfer data to the AutoGRAPH server. By default all AutoGRAPH-GSM series devices except AutoGRAPH-GSM-SL use AutoGRAPH protocol. AutoGRAPH-GSM-SL devices require unlocking of AutoGRAPH protocol.

  1 – MinTrans – protocol used to transfer data to MinTrans server (pursuant to the Order No. 285).

  2 – TKmonitoring.com protocol – closed AutoGRAPH protocol used to transfer data to TKmonitoring.com server.

  3 – AGTP protocol – closed AutoGRAPH Data Transfer protocol providing high transmission rate compared to AutoGRAPH protocol. AGTP protocol is supported with the AutoGRAPH server of ver. 5 and higher.

SAMPLE COMMAND
- via SMS:
`1234zxcv MAINTRANSPORT=0;`

- via server:
`MAINTRANSPORT=0;`

SAMPLE REPLY
- on SMS command:
`52500()#MAINTRANSPORT=0;`

- on command via server:
`52500()#MAINTRANSPORT=0;`

The device 52500 sends data to main server in AutoGRAPH protocol.

RESIP – reserve IP address of main server

Command	RESIP
Description	Reserve IP address of main server
Request command	GRESIP
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up reserve IP address of main server which will be used when connection to main IP address is unavailable. Before enabling reserve connection, ensure that the server supports several connections.

COMMAND FORMAT
password RESIP=ip;

parameters:
• **ip** – reserve IP address of main server.

SAMPLE COMMAND
• via SMS:
```
1234zxcv RESIP=127.0.0.1;
```

• via server:
```
RESIP=127.0.0.1;
```

SAMPLE REPLY
• on SMS command:
```
52500()#GPRS:RESIP=127.0.0.1;
```

• on command via server:
```
RESIP=127.0.0.1;
```

The device 52500 uses additional connection to main server to IP address 127.0.0.1 when main connection is unavailable.

NOTE

To disable reserve connection to main server, send command RESIP=255.255.255.255; or RESIP=0.0.0.0; to AutoGRAPH device.

RESDOMAIN – reserve domain name of main server

Command	RESDOMAIN
Description	Reserve domain name of main server
Request command	GRESDOMAIN
Supported with firmware	7.3 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up reserve domain name of main server which will be used when connection to main domain name is unavailable. Before enabling reserve connection, ensure that the server supports several connections.

COMMAND FORMAT

password RESDOMAIN=resdomain;

parameters:
• **resdomain** – reserve domain name of main server.

SAMPLE COMMAND

• via SMS:
```
1234zxcv RESDOMAIN=office.tk-chel.ru;
```

• via server:
```
RESDOMAIN=office.tk-chel.ru;
```

SAMPLE REPLY

• on SMS command:
```
52500()#RESDOMAIN=office.tk-chel.ru;
```

• on command via server:
```
RESDOMAIN=office.tk-chel.ru;
```

The device 52500 uses additional connection to main server to domain name office.tk-chel.ru when main connection is unavailable.

RESPORT – main server port for reserve connection

Command	RESPORT
Description	Main server port for reserve connection
Request command	GRESPORT
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up port of main server for reserve connection which will be used when connection to main port is unavailable. Before enabling reserve connection, ensure that the server supports several connections.

COMMAND FORMAT

password RESPORT=port;

parameters:
- **port** – port number for reserve connection to main server. Default port for AutoGRAPH server is 2225.

SAMPLE COMMAND
- via SMS:
```
1234zxcv RESPORT=2225;
```

- via server:
```
RESPORT=2225;
```

SAMPLE REPLY
- on SMS command:
```
52500()#GPRS:RESPORT=2225;
```

- on command via server:
```
RESPORT=2225;
```

The device 52500 uses port 2225 for additional connection to main server when main connection is unavailable.

NOTE *To disable reserve connection to main server, send command RESPORT=0; to AutoGRAPH device.*

SSL − secure connection to main server

Command	SSL
Description	Secure connection to main server
Request command	GSSL
Supported with firmware	10.46 and higher
Setting	Available via server and SMS
Comment	The command is intended to enable secure connection to main server.

COMMAND FORMAT

password SSL=status;

parameters:
• **status** –secure connection to main server:
  1 – enabled;
  0 – disabled. In this case the device sends data via regular connection.

REPLY FORMAT

serial()#SSL=status;

parameters:
• **status** – type of connection:
  NOT SUPPORTED – secure connection is not supported by the device;
  1 or 0 – secure connection is supported: 1 – data is sent via secure connection, 0 – data is sent via regular connection.

SAMPLE COMMAND
• via SMS:
`1234zxcv SSL=1;`

• via server:
`SSL=1;`

SAMPLE REPLY
• on SMS command:
`52500()#SSL=1;`

• on command via server:
`SSL=1;`

The device 52500 is configured to send data to server via secure connection.

IMPORTANT

Secure connection is available only for main server and main connection. Regular connection port and secure connection port are different. When changing connection type, server port number must be changed. Use command "PORT" to set the required port.

NOTE

Default port of secure connection to AutoGRAPH server is 2443. Secure connection is supported by AutoGRAPH server of version 4.1.0 and higher.

NOTE

In case of failure related to secure connection to AutoGRAPH server, it is recommended to contact technical support of TechnoKom. Sometimes firmware updating of device GSM modem is required.

PARALLELIP – parallel server IP address

Command	PARALLELIP
Description	Parallel server IP address
Request command	GPARALLELIP
Supported with firmware	10.45 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up IP address of parallel server.

AutoGRAPH devices support parallel data transmission to two data servers. The device sends same data to both servers. If one of the servers is not available at the moment of data transmission, data will be sent only to available server. At next data transmission period, all data which hasn't been sent previously will be sent to previously unavailable server along with new data.

COMMAND FORMAT
password PARALLELIP=ip;

parameters:
• **ip** – IP address of parallel server. IP address must be real and static.

SAMPLE COMMAND
• via SMS:
```
1234zxcv PARALLELIP=83.142.128.115;
```

• via server:
```
PARALLELIP=83.142.128.115;
```

SAMPLE REPLY
• on SMS command:
```
52500()#PARALLELIP=83.142.128.115;
```

• on command via server:
```
PARALLELIP=83.142.128.115;
```

The device 52500 sends data to parallel server with IP address – 83.142.128.115.

IMPORTANT   *Data from both parallel servers must be processed with same Dispatch software.*

NOTE   *Data transmission to two servers increases GPRS traffic and can cause data transmission delay.*

NOTE   *Parallel server can be used only for data transmission. It is not available to send remote control commands via the parallel server as well as receive photos and messages.*

PARALLELPORT – parallel server port

Command	PARALLELPORT
Description	Parallel server port
Request command	GPARALLELPORT
Supported with firmware	10.45 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up port of parallel server.

COMMAND FORMAT

password PARALLELPORT=port;

parameters:
• **port** – port number of parallel server.

SAMPLE COMMAND

• via SMS:
```
1234zxcv PARALLELPORT=2225;
```

• via server:
```
PARALLELPORT=2225;
```

SAMPLE REPLY

• on SMS command:
```
52500()#PARALLELPORT=2225;
```

• on command via server:
```
PARALLELPORT=2225;
```

The device 52500 uses port 2225 to send data to parallel server.

....

NOTE *To disable data transmission to parallel server, send command PARALLELPORT=0; to AutoGRAPH device.*

....

PARALLELDOMAIN – parallel server domain name

Command	PARALLELDOMAIN
Description	Parallel server domain name
Request command	GPARALLELDOMAIN
Supported with firmware	10.45 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up domain name of parallel server.

COMMAND FORMAT

password PARALLELDOMAIN=domain;

parameters:
• **domain** – domain name of parallel server.

SAMPLE COMMAND

• via SMS:
```
1234zxcv PARALLELDOMAIN=of.tk-chel.ru;
```

• via server:
```
PARALLELDOMAIN=of.tk-chel.ru;
```

SAMPLE REPLY

• on SMS command:
```
52500()#PARALLELDOMAIN=of.tk-chel.ru;
```

• on command via server:
```
PARALLELDOMAIN=of.tk-chel.ru;
```

The device 52500 sends data to parallel server with domain name of.tk-chel.ru.

PARALLELTRANSPORT − protocol of data transmission to parallel server

Command	PARALLELTRANSPORT
Description	Protocol of data transmission to parallel server
Request command	GPARALLELTRANSPORT
Supported with firmware	10.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up protocol of data transmission to parallel server.

COMMAND FORMAT

password PARALLELTRANSPORT=format;

parameters:
- **format** –data transmission protocol:

  0 – AutoGRAPH – closed AutoGRAPH protocol used to transfer data to the AutoGRAPH server. By default all AutoGRAPH-GSM series devices except AutoGRAPH-GSM-SL use AutoGRAPH protocol to transfer data. AutoGRAPH-GSM-SL devices require unlocking of AutoGRAPH protocol.

  1 – MinTrans – protocol used to transfer data to MinTrans server (pursuant to Order No. 285).

  2 – TKmonitoring.com protocol – closed AutoGRAPH protocol used to transfer data to TKmonitoring.com server.

  3 – AGTP protocol – closed AutoGRAPH Data Transfer protocol providing high transmission rate compared to AutoGRAPH protocol. AGTP protocol is supported with the AutoGRAPH server of ver. 5 and higher.

SAMPLE COMMAND
- via SMS:
```
1234zxcv PARALLELTRANSPORT=2;
```

- via server:
```
PARALLELTRANSPORT=2;
```

SAMPLE REPLY
- on SMS command:
```
52500()#PARALLELRANSPORT=2;
```

- on command via server:
```
52500()#PARALLELRANSPORT=2;
```

The device 52500 sends data to parallel server in TKmonitoring.com protocol.

SIM PRIORITY / ROAMING SETTINGS

SIM1HOME – main SIM home network identifiers

Command	SIM1HOME
Description	Main SIM home network identifiers
Request command	GSIM1HOME
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up home network identifiers of main SIM.

COMMAND FORMAT

password SIM1HOME=id1,id2,id3,id4,id5,id6,id7,id8;

parameters:
- **id1...id8** – home network identifiers of main SIM. For proper processing of the command, all fields must be specified. Empty identifiers must be filled by 0.

SAMPLE COMMAND

• via SMS:
```
1234zxcv SIM1HOME=25017,0,0,0,0,0,0,0;
```

• via server:
```
SIM1HOME=25017,0,0,0,0,0,0,0;
```

SAMPLE REPLY

• on SMS command:
```
52500()#SIM1HOME=25017,0,0,0,0,0,0,0;
```

• on command via server:
```
SIM1HOME=25017,0,0,0,0,0,0,0;
```

One home network identifier of main SIM – 25017 is specified in the device 52500.

SIM2HOME – backup SIM home network identifiers

Command	SIM2HOME
Description	Backup SIM home network identifiers
Request command	GSIM2HOME
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up home network identifiers of backup SIM.

COMMAND FORMAT

password SIM2HOME=id1,id2,id3,id4,id5,id6,id7,id8;

parameters:
- **id1...id8** – home network identifiers of backup SIM. For proper processing of the command, all fields must be specified. Empty identifiers must be filled by 0.

SAMPLE COMMAND

• via SMS:
```
1234zxcv SIM2HOME=25001,0,0,0,0,0,0,0;
```

• via server:
```
SIM2HOME=25001,0,0,0,0,0,0,0;
```

SAMPLE REPLY

• on SMS command:
```
52500()#SIM2HOME=25001,0,0,0,0,0,0,0;
```

• on command via server:
```
SIM2HOME=25001,0,0,0,0,0,0,0;
```

One home network identifier of backup SIM – 25017 is specified in the device 52500.

SIM1PRIORITY – main SIM roaming network identifiers

Command	SIM1PRIORITY
Description	Main SIM roaming network identifiers
Request command	GSIM1PRIORITY
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up roaming network identifiers of main SIM.

COMMAND FORMAT

password SIM1PRIORITY=id1,id2,id3,id4,id5,id6,id7,id8,id9,id10,id11,id12,id13,id14,id15,id16;

parameters:
- **id1...id16** – roaming network identifiers of main SIM. Network priority corresponds the listing order and the *id1* has the highest priority. For proper processing of the command, all fields must be specified. Empty identifiers must be filled by 0.

SAMPLE COMMAND
- via SMS:
```
1234zxcv SIM1PRIORITY=25039,25007,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

- via server:
```
SIM1PRIORITY=25039,25007,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

SAMPLE REPLY
- on SMS command:
```
52500()#SIM1PRIORITY=25039,25007,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

- on command via server:
```
SIM1PRIORITY=25039,25007,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

Following roaming networks of main SIM are enabled in the device 52500 – 25039 and 25007. The network with identifier 25039 has higher priority.

SIM2PRIORITY − backup SIM roaming network identifiers

Command	SIM2PRIORITY
Description	Backup SIM roaming network identifiers
Request command	GSIM2PRIORITY
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up roaming network identifiers of backup SIM.

COMMAND FORMAT

password SIM2PRIORITY=id1,id2,id3,id4,id5,id6,id7,id8,id9,id10,id11,id12,id13,id14,id15,id16;

parameters:
- **id1...id16** – roaming network identifiers of backup SIM. Network priority corresponds the listing order and the *id1* has the highest priority. For proper processing of the command, all fields must be specified. Empty identifiers must be filled by 0.

SAMPLE COMMAND
- via SMS:
```
1234zxcv SIM2PRIORITY=25501,25702,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

- via server:
```
SIM2PRIORITY=25501,25702,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

SAMPLE REPLY
- on SMS command:
```
52500()#SIM2PRIORITY=25501,25702,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

- on command via server:
```
SIM2PRIORITY=25501,25702,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

Following roaming networks of backup SIM are enabled in the device 52500 – 25501 and 25702. The network with identifier 25501 has higher priority.

SIMSELECTMODE − mobile operator selection mode

Command	SIMSELECTMODE
Description	Mobile operator selection mode
Request command	GSIMSELECTMODE
Supported with firmware	9.51 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up mode of selection of mobile operator.

COMMAND FORMAT

password SIMSELECTMODE=mode;

parameters:
- **mode** – mobile operator selection mode:

  0 – automatic choice of any available operator;

  1 – connection to enabled operators only. List of enabled operators for each device SIM includes all home network and roaming network operators which identifiers are specified in the device.

  2 – registration in home network only.

SAMPLE COMMAND
- via SMS:
```
1234zxcv SIMSELECTMODE=0;
```

- via server:
```
SIMSELECTMODE=0;
```

SAMPLE REPLY
- on SMS command:
```
52500()#SIMSELECTMODE=0;
```

- on command via server:
```
SIMSELECTMODE=0;
```

Mobile operator selection mode is 0 – the device will connect to any available operator to send data to server.

NOTE

Detailed information on mobile operator selection modes are given in document "Setup and configuration: GSMConf software".

MOTION DETECTION

MOTION – motion detection settings

Command	MOTION
Description	Motion detection settings
Request command	GMOTION
Supported with firmware	9.66 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up methods of motion detection.

COMMAND FORMAT

password MOTION=in,level,gps,accelerator,can_rpm,send_period,write_period;

parameters:
- **in** – number of digital input which triggering is considered as vehicle stop.
    - 1...8 – number of digital input.
    - 0 – disables motion detection by digital input state;
- **level** – state of digital input corresponding to vehicle stop.
    - 1 – +Vin;
    - 0 – -Vin.
- **gps** – use speed calculated by internal GNSS receiver to detect motion:
    - 1 – enabled;
    - 0 – disabled.
- **accelerator** – use internal accelerometer readings to detect motion:
    - 1 – enabled;
    - 0 – disabled.
- **can_rpm** – use readings from vehicle CAN bus to detect motion:
    - 1 – enabled;
    - 0 – disabled.
- **send_period** – coefficient which data transmission period is multiplied by at stops.
    - 1...100 – coefficient;
    - 0 – disables data transmission at stops.
- **write_period** – coefficient which recording period of analog data and data from LLS sensors multiplied by at stops.
    - 1...100 – coefficient;
    - 0 – disables recording of analog data and data from LLS sensors at stops.

The field "send_period" is supported by AutoGRAPH devices with firmware of version AGTK-10.61 or AGXL-11.32 and higher.

SAMPLE COMMAND

• via SMS:

```
1234zxcv MOTION=0,0,1,0,0,10,20;
```

• via server:

```
MOTION=0,0,1,0,0,10,20;
```

SAMPLE REPLY

• on SMS command:

```
52500()#MOTION=0,0,1,0,0,10,20;
```

• on command via server:

```
MOTION=0,0,1,0,0,10,20;
```

The device 52500 is configured to detect stops and motion stars by speed calculated using GNSS receiver. Data transmission period is increased 10 times at stops, recording period of analog and LLS sensors readings is increased 20 times.

ECO DRIVING MODE SETTINGS

DRIVING – Eco Driving mode settings

Command	DRIVING
Description	Eco Driving mode settings
Request command	GDRIVING
Supported with firmware	AGEX-12.16 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up Eco Driving mode of AutoGRAPH controllers of ver. 3.0 and higher.

COMMAND FORMAT

password DRIVING=Acceleration:Hard_braking:Emerg_braking:Right_turn:Left_turn:Road_shocks:Output1,Output2;

parameters:
- **Acceleration** – settings of brick acceleration detection. Specify in the listed order and comma separated:
  - threshold of brick acceleration, in m/s^2;
  - minimal duration (in ms) of the threshold exceeding after that the brick acceleration is detected.
- **Hard_braking** – settings of hard braking detection. Specify in the listed order and comma separated:
  - threshold of acceleration in case of hard braking, in m/s^2;
  - minimal duration (ms) of the threshold exceeding after that the hard braking is detected.
- **Emerg_braking –** settings of emergency braking detection. Specify in the listed order and comma separated:
  - threshold of acceleration in case of emergency braking, in m/s^2;
  - minimal duration (ms) of the threshold exceeding after that the emergency braking is detected.
- **Right_turn** – settings of quick right turn detection. Specify in the listed order and comma separated:
  - threshold of quick right turn acceleration, in m/s^2;
  - minimal duration (ms) of the threshold exceeding after that the quick right turn is detected.
- **Left_turn** – settings of quick left turn detection. Specify in the listed order and comma separated:
  - threshold of quick left turn acceleration, in m/s^2;
  - minimal duration (ms) of the threshold exceeding after that the quick left turn is detected.
- **Road_shocks** – detection settings of excessive acceleration caused by road shocks. Specify in the listed order and comma separated:
  - acceleration threshold of road shocks, in m/s^2;
  - minimal duration (ms) of the threshold exceeding after that the road shocks is detected.
- **Output1** – turn on the digital output 1 when even one of the Eco Driving thresholds is exceeded. The output is turned on until no threshold is exceeded:
  1 – enabled;
  0 – disabled.
- **Output2** – turn on the digital output 2 when even one of the Eco Driving thresholds is exceeded. The output is turned on until no threshold is exceeded:
  1 – enabled;
  0 – disabled.

SAMPLE COMMAND

• via SMS:
```
1234zxcv DRIVING=11,700:10,700:15,700:5,700:5,700:20,100:0,1;
```

• via server:
```
DRIVING=11,700:10,700:15,700:5,700:5,700:20,100:0,1;
```

SAMPLE REPLY

• on SMS command:
```
52500()#DRIVING=11,700:10,700:15,700:5,700:5,700:20,100:0,1;
```

• on command via server:
```
DRIVING=11,700:10,700:15,700:5,700:5,700:20,100:0,1;
```

Following Eco Driving mode settings are specified in the device 52500:

• Brick acceleration: threshold – 11, duration – 700;
• Hard braking: threshold – 10, duration – 700;
• Emergency braking: threshold – 15, duration – 700;
• Quick right turn: threshold – 5, duration – 700;
• Quick left turn: threshold – 5, duration – 700;
• Road shocks: threshold – 20, duration–100;

• When even on threshold is exceeded the digital output 2 of the device will be turned on.

NOTE

AutoGRAPH controller can be set up to send notifications to a customer in case of Eco Driving mode violation (event 6) – when even one of the specified thresholds is exceeded. Detailed information is given in section "Events settings".

VOICE COMMUNICATION

TELUPx — auto answering a call

Command	TELUPx
Description	Auto answering a call
Request command	GTELUPx
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to enable auto answering of calls from specified phone numbers.

COMMAND FORMAT

password TELUPx=tel_number;

parameters:
- **tel_number** – phone number, incoming call from which will be automatically answered. The phone number must be specified without spaces with prefix for national call;
- **x** – order number of phone number (1…2). Up to 2 phone numbers for auto answering can be specified in the device.

SAMPLE COMMAND

• via SMS:
```
1234zxcv TELUP1=50044;
```

• via server:
```
TELUP1=50044;
```

SAMPLE REPLY

• on SMS command:
```
52500()#TELUP1=50044;
```

• on command via server:
```
TELUP1=50044;
```

The device 52500 will automatically answer calls from phone number 50044. Besides that the device will automatically answer calls from any phone number containing string 50044 in its number, e.g. +7900**50044**33,+7900**50044**34, +79005**50044**.

TELSMS1, TELSMS2 − auto dialling numbers

Command	TELSMS1, TELSMS2
Description	Auto dialling numbers
Request command	GTELSMS1, GTELSMS2
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up phone numbers which the device dials by pressing the button on handsfree.

COMMAND FORMAT

password TELSMSx=tel_number;

parameters:
- **tel_number** – phone number which the device dials by pressing the button on handsfree. Phone number must be specified without spaces with prefix for national call (e.g. +7);
- **x** – order number of phone number (1...2). Up to 2 phone numbers for auto dialling can be specified in the device.

SAMPLE COMMAND
- via SMS:
```
1234zxcv TELSMS1=89501111111;
```

- via server:
```
TELSMS1=89501111111;
```

SAMPLE REPLY
- on SMS command:
```
52500()#TELSMS1=89501111111;
```

- on command via server:
```
TELSMS1=89501111111;
```

The device 52500 will automatically dial phone number 89501111111 by pressing the button on handsfree.

RINGOUT – incoming call indication

Command	RINGOUT
Description	Incoming call indication
Request command	GRINGOUT
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up indication of incoming call using digital input 1.

COMMAND FORMAT

password RINGOUT=status;

parameters:
• **status** – incoming call indication on digital input 1:
  N – disabled;
  Y – enabled.

SAMPLE COMMAND

• via SMS:
```
1234zxcv RINGOUT=Y;
```

• via server:
```
RINGOUT=Y;
```

SAMPLE REPLY

• on SMS command:
```
52500()#RINGOUT=Y;
```

• on command via server:
```
RINGOUT=Y;
```

The device 52500 is set up to indicate incoming call on digital input 1.

MICAMP – microphone gain

Command	MICAMP
Description	Microphone gain
Request command	GMICAMP
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up device internal microphone gain.

COMMAND FORMAT

password MICAMP=gain;

parameters:
• **gain** – microphone gain: from 1 to 8 (maximum gain).

SAMPLE COMMAND
• via SMS:
```
1234zxcv MICAMP=5;
```

• via server:
```
MICAMP=5;
```

SAMPLE REPLY
• on SMS command:
```
52500()#MICAMP=5;
```

• on command via server:
```
MICAMP=5;
```

Microphone gain of the device 52500 is 5.

DYNAMP – speaker level

Command	DYNAMP
Description	Speaker level
Request command	GDYNAMP
Supported with firmware	5.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to set up device loudspeaker level.

COMMAND FORMAT

password DYNAMP=level;

parameters:
• **level** – loudspeaker level: from 1 to 15 (maximum volume).

SAMPLE COMMAND

• via SMS:

`1234zxcv DYNAMP=8;`

• via server:

`DYNAMP=8;`

SAMPLE REPLY

• on SMS command:

`52500()#GPRS:DYNAMP=8;`

• on command via server:

`DYNAMP=8;`

Loudspeaker level of the device 52500 is 8.

OUTPUTS CONTROL

PULSEx – pulse to digital output

Command	PULSEx
Description	Pulse to digital output
Supported with firmware	4.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to send short pulse to the device digital outputs. AutoGRAPH onboard controllers are equipped with two open collector digital outputs.

COMMAND FORMAT

password PULSEx=time;

parameters:
• **time** – pulse duration in seconds;
• **x** – output number (1..2).

SAMPLE COMMAND

• via SMS:
```
1234zxcv PULSE1=7;
```

• via server:
```
PULSE1=7;
```

SAMPLE REPLY

• on SMS command:
```
52500()#PULSE1=7;
```

• on command via server:
```
PULSE1=7;
```

7 seconds length pulse is sent to digital output 1 of the device 52500.

SOUTx – switching the digital output

Command	SOUTx
Description	Switching the digital output
Supported with firmware	4.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to switch device digital outputs to the required state. Outputs will remain in that state till the device restart.

COMMAND FORMAT

password SOUTx=state;

parameters:

• **state** – output state:

   0 – switches to low level (open collector is closed);

   1 – switches to high level (open collector is open).

• **x** – output number (1..2).

SAMPLE COMMAND

• via SMS:

```
1234zxcv SOUT1=1;
```

• via server:

```
SOUT1=1;
```

SAMPLE REPLY

• on SMS command:

```
52500()#SOUT1=1;
```

• on command via server:

```
SOUT1=1;
```

The digital output 1 of the device 52500 is switched to high level state. This state will be kept till the device restart.

MOUTx − switching the digital output

Command	MOUTx
Description	Switching the digital output
Request command	GMOUTx
Supported with firmware	4.0 and higher
Setting	Available via server and SMS
Comment	The command is intended to switch device digital outputs to the required state. Outputs will remain in that state even after the device restart.

COMMAND FORMAT

password MOUTx=out;

parameters:
- **out** – output state:
  - 0 – switches to low level (open collector is closed);
  - 1 – switches to high level (open collector is open).
- **x** – output number (1..2).

SAMPLE COMMAND
- via SMS:
```
1234zxcv MOUT2=0;
```

- via server:
```
MOUT2=0;
```

SAMPLE REPLY
- on SMS command:
```
52500()#MOUT2=0;
```

- on command via server:
```
MOUT2=0;
```

The digital output 2 of the device 52500 is switched to high level state. This state will be kept even after the device restart.

DIGITAL INPUTS SETTINGS

INALIASx – digital input alias

Command	INALIASx
Description	Digital input alias
Request	GINALIASx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up an alias of the device's digital input, which is used to identify the input in notifications which are sent by the device when the input triggers.

COMMAND FORMAT

password INALIASx=inalias;

parameters:
- **inalias** – an input alias. The alias can contain up to 8 characters, which may be uppercase and lowercase letters of Latin alphabet and numbers from 0 to 9;
- **x** – input number (1..8).

SAMPLE COMMAND

• via SMS:
```
1234zxcv INALIAS5=INPUT 5;
```

• via server:
```
INALIAS5=INPUT 5;
```

SAMPLE REPLY

• on SMS command:
```
52500()#INALIAS=INPUT 5;
```

• on command via server:
```
INALIAS=INPUT 5;
```

The firth digital input alias is INPUT 5.

PERIODCOUNT12 – counters recording period

Command	PERIODCOUNT12
Description	Recording period of counters 1 and 2.
Request	GPERIODCOUNT12
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up data recording period for counters (digital inputs) 1 and 2 (in seconds).

COMMAND FORMAT

password PERIODCOUNT12=count12;

parameters:
- **count12** – recording period of counters 1 and 2. The period ranges from 5 to 3600 seconds, 0 – disables data recording.

SAMPLE COMMAND
- via SMS:
```
1234zxcv PERIODCOUNT12=30;
```

- via server:
```
PERIODCOUNT12=30;
```

SAMPLE REPLY
- on SMS command:
```
52500()#PERIODCOUNT12=30;
```

- on command via server:
```
PERIODCOUNT12=30;
```

Recording period of counters 1 and 2 is 30 seconds.

Commands PERIODCOUNT34, PERIODCOUNT56, PERIODCOUNT7,8 allow to set up recording period of counters 3 and 4, 5 and 6, 7 and 8, respectively. Formats of these commands are similar to the format of PERIODCOUNT12 command.
Commands PERIODCOUNT56 and PERIODCOUNT78 are supported with firmware of version 7.1 and higher.

INPFLAGSx (1..4) – input 1..4 settings

Command	INPFLAGSx
Description	Inputs settings
Request	GINPFLAGSx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up digital inputs 1..4.

COMMAND FORMAT

password INPFLAGSx=flags;

parameters:
- **flags** – input settings in the following order: p1,p2,p3,p4,p5,p6,p7,p8,p9:

  p1 – input triggering state initiating data transmission:
  - 0 – connected to "–";
  - 1 – open or connected to "+".

  p2 – send data to server (via GPRS) when input triggers:
  - 0 – disabled;
  - 1 – enabled.

  p3 – send SMS notification of input triggering:
  - 0 – disabled;
  - 1 – enabled.

  p4 – make a voice call when input triggers:
  - 0 – disabled;
  - 1 – enabled.

  p5 – input operation mode:
  - A – normal input;
  - B – storage counter;
  - C – periodic counter;
  - F – frequency input.

  p6 – send message about input triggering to external device connected to the AutoGRAPH device via RS-485:
  - 0 – disabled;
  - 1 – enabled;

  p7 – reserved;
  p8 – reserved;
  p9 – reserved.

- **x** – input number (from 1 to 4).

SAMPLE COMMAND

• via SMS:
```
1234zxcv INPFLAGS1=0,1,0,0,A,0,0,0,0;
```

• via server:
```
INPFLAGS1=0,1,0,0,A,0,0,0,0;
```

SAMPLE REPLY

• on SMS command:
```
52500()#INPFLAGS1=0,1,0,0,A,0,0,0,0;
```

• on command via server:
```
INPFLAGS1=0,1,0,0,A,0,0,0,0;
```

The digital input 1 of the device 52500 is set up as follows:

p1 – 0 – the input triggers when connecting to "-";

p2 – 1 – data sending to server is enabled;

p3 – 0 – sending SMS notification is disabled;

p4 – 0 – voice call is disabled;

p5 – A – the input is set as normal input. This mode enables data recording when input switches to other state;

p6 – 0 – message sending to external device via RS-485 is disabled;

p7 – reserved;

p8 – reserved;

p9 – reserved.

IMPORTANT

Reserved parameters (p7, p8, p9) are not processed by the device. Even so, they are to be specified for the command format compatibility.

INPFLAGSx (5..8) – inputs 5..8 settings

Command	INPFLAGSx
Description	Inputs settings
Request	GINPFLAGSx
Supported with firmware	7.1 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up digital inputs 5..8.

COMMAND FORMAT

password INPFLAGSx=flags;

parameters:
- **flags** – input settings in the following order: p1,p2,p3,p4,p5,p6,p7,p8,p9:
  - **p1** – input triggering state initiating data transmission:
    - 0 – open or connected to "–";
    - 1 – connected to "+".
  - **p2** – send data to server (via GPRS) when input triggers::
    - 0 – disabled;
    - 1 – enabled.
  - **p3** – send SMS notification about input triggering:
    - 0 – disabled;
    - 1 – enabled.
  - **p4** – make a voice call when input triggers:
    - 0 – disabled;
    - 1 – enabled.
  - **p5** – input operation mode:
    - A – normal input;
    - B – accumulative counter;
    - F – frequency input.
  - **p6** – send message about input triggering to external device connected to the AutoGRAPH controller via RS-485:
    - 0 – disabled;
    - 1 – enabled;
  - **p7** – reserved;
  - **p8** – reserved;
  - **p9** – reserved.
- **x** – input number (from 5 to 8).

SAMPLE COMMAND

• via SMS:

```
1234zxcv INPFLAGS8=0,1,0,0,A,1,0,0,0;
```

• via server:

```
INPFLAGS8=0,1,0,0,A,1,0,0,0;
```

SAMPLE REPLY

• on SMS command:

```
52500()#INPFLAGS8=0,1,0,0,A,1,0,0,0;
```

• on command via server:

```
52500()#INPFLAGS8=0,1,0,0,A,1,0,0,0;
```

The digital input 8 of the device 52500 is set up as follows:

p1 – the input triggers when connecting to "-".

p2 – 1 – data sending to server is enabled;

p3 – 0 – sending SMS notification is disabled;

p4 – 0 – voice call is disabled;

p5 – A – the input is set as normal input. This mode enables data recording when the inputs switches to other state;

p6 – message sending to external device via RS-485 is enabled;

p7 – reserved;

p8 – reserved;

p9 – reserved.

VOCONF – operation mode of high-impedance digital input

Command	VOCONF
Description	Operation mode of high-impedance digital input
Request	GVOCONF
Supported with firmware	AGEX-12.15 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up an operation mode of high-impedance digital input of AutoGRAPH controllers of ver. 3.0 and higher.

COMMAND FORMAT

password VOCONF=mode,period;

parameters:
- **mode** – input operation mode:
  - A – normal input;
  - B – accumulative counter;
  - F – frequency input.
- **period** – recoding period of the input readings – a number of accumulated pulses (in modes A and B) and frequency readings (in mode F). Minimal period is 5 seconds, maximum period is 3600 seconds (1 hour), 0 period disables the record of counters readings in the modes B and F. Current input state is recorded independent from the specified recording period.

SAMPLE COMMAND
- via SMS:
```
1234zxcv VOCONF=A,10;
```

- via server:
```
VOCONF=A,10;
```

SAMPLE REPLY
- on SMS:
```
52500()#GPRS:VOCONF=A,10;
```

- on command via server:
```
VOCONF=A,10;
```

The high-impedance input of the device 52500 is set up to operate in Normal mode. Recording period of the input readings – 10 seconds.

TELSMSx – phone number for notification about input triggering

Command	TELSMSx
Description	Phone number for sending notification about input triggering
Request	GTELSMSx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up a phone number to which the device sends notification (voice call or SMS) about input triggering. Format of device messages is described in the section "Device SMS notifications".

COMMAND FORMAT

password TELSMSx=tel_number;

parameters:
- **tel_number** – phone number for sending notification about input triggering. Enter number without spaces and use prefixes for national calling;
- **x** – number of configured input (1..8).

SAMPLE COMMAND
- via SMS:
```
1234zxcv TELSMS2=89005554433;
```

- via server:
```
TELSMS2=89005554433;
```

SAMPLE REPLY
- on SMS:
```
52500()#GPRS:TELSMS2=89005554433;
```

- on command via server:
```
TELSMS2=89005554433;
```

The device sends notification to number 89005554433 when input 2 triggers.

⚠️ **IMPORTANT**   *Phone number of first and second inputs are similar to phone numbers of auto dialling by handsfree button pressing.*

ANALOG INPUTS SETTINGS

MODEADx − analog input mode

Command	MODEADx
Description	Analog input mode
Request	GMODEADx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up operation mode of analog inputs.

COMMAND FORMAT

password MODEADx=mode;

parameters:
- **mode** – analog input operation mode:
  A – analog input;
  D – digital input.
- **x** – number of configured input (1, 2).

SAMPLE COMMAND
- via SMS
```
1234zxcv MODEAD1=A;
```

- via server
```
MODEAD1=A;
```

SAMPLE REPLY
- on SMS:
```
52500()#MODEAD1=A;
```

- on command via server:
```
MODEAD1=A;
```

The analog input 1 of the device is set up to operate as analog input.

ALEVELx − adaptive record level of analog input

Command	ALEVELx
Description	Adaptive record level of analog input
Request	GALEVELx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up the threshold of voltage level changing on analog input exceeding that initiates additional record of analog readings.

COMMAND FORMAT

password ALEVELx=level;

parameters:
- **level** – threshold of voltage changing in ADC stages;
- **x** – number of analog input (1,2).

SAMPLE COMMAND
- via SMS
```
1234zxcv ALEVEL2=60;
```

- via server
```
ALEVEL2=60;
```

SAMPLE REPLY
- on SMS:
```
52500()#GPRS:ALEVEL2=60;
```

- on command via server:
```
ALEVEL2=60;
```

The adaptive record level of the analog input 2 is 60. It means that the voltage level changing on the analog input 2 greater than 60 ADC stages initiates additional record of analog data.

PERIODUSRx − averaging period of analog data

Command	PERIODUSRx
Description	Averaging period of analog data
Request	GALEVELx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up averaging period of analog data.

COMMAND FORMAT

password PERIODUSRx=period;

parameters:
- **period** – averaging period of analog data in seconds. Minimum averaging period – 1 second, maximum averaging period – 60 seconds;
- **x** – number of analog input (1,2).

SAMPLE COMMAND
- via SMS
```
1234zxcv PERIODUSR2=30;
```

- via server
```
PERIODUSR2=30;
```

SAMPLE REPLY
- on SMS:
```
52500()#PERIODUSR2=30;
```

- on command via server:
```
PERIODUSR2=30;
```

Averaging period of analog data of analog input 2 – 30 seconds.

MODEANALOG – adaptive record mode

Command	MODEANALOG
Description	Adaptive record mode of analog input
Request	GMODEANALOG
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up adaptive record mode of analog data.

COMMAND FORMAT

password MODEANALOG=mode;

parameters:
- **mode** – record mode of analog data:
  F – record analog data not less than the record period (recommended option);
  V – record analog data not more than the record period.

SAMPLE COMMAND
- via SMS
`1234zxcv MODEANALOG=F;`

- via server
`MODEANALOG=F;`

SAMPLE REPLY
- on SMS:
`52500()#MODEANALOG=F;`

- on command via server:
`MODEANALOG=F;`

The device 52500 is set up to record analog data not less than the specified record period.

POROGx – switching level in digital input mode

Command	POROGx
Description	Switching level of analog input in digital input mode
Request	GMODEANALOG
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up switching level of analog input in digital input mode.

COMMAND FORMAT

password POROGx=porog;

parameters:
- **porog** – switching level of analog input when it operates as digital input. Switching level of the analog input 1 ranges from 100 to 1000. Switching level of the analog input 2 ranges from 50 to 1000;
- **x** – number of analog input (1 or 2).

SAMPLE COMMAND
- via SMS
```
1234zxcv POROG1=200;
```

- via server
```
POROG1=200;
```

SAMPLE REPLY
- on SMS:
```
52500()#POROG1=200;
```

- on command via server:
```
POROG1=200;
```

The switching level of the first analog input is 200.

PERIODANALOG – analog data recording period

Command	PERIODANALOG
Description	Analog data recording period
Request	GPERIODANALOG
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up recording period of analog data. The period should be specified in seconds.

COMMAND FORMAT

password PERIODANALOG=analog_time;

parameters:
- **analog_time** – analog data recording period. Minimum value – 5 seconds, maximum value – 3600 seconds. Analog data recording can't be disabled. That's why to minimize data amount transferred to server, it is recommended to set maximum period of analogue data recording (3600 seconds) when it is not necessary to record analog data.

SAMPLE COMMAND

• via SMS
```
1234zxcv PERIODANALOG=30;
```

• via server
```
PERIODANALOG=30;
```

SAMPLE REPLY

• on SMS:
```
52500()#GPRS:PERIODANALOG=30;
```

• on command via server:
```
PERIODANALOG=30;
```

The analog data recording period is 30 seconds.

RPM INPUT

FREQCONF – RPM input settings

Command	FREQCONF
Description	RPM input settings
Request	GFREQCONF
Supported with firmware	AGEX-12.15 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up RPM input of AutoGRAPH controllers of ver. 3.0 and higher.

COMMAND FORMAT

password FREQCONF=p1,p2,p3,p4,p5,p6,p7,p8,p9,p10;

parameters:

- **p1** – recording period of RPM input readings, in seconds. Minimal period is 1 second, maximum period is – 3600 seconds, 0 – disables periodic recording of RPM readings. When 0 period is specified, the RPM readings can be recorded in the adaptive basis, if the adaptive mode is enabled (see parameter p4);

- **p2** – averaging period of RPM readings, in seconds. Minimal period is 1 seconds, maximum period is 240 seconds;

- **p3** – a numeric coefficient multiplying raw RPM readings before recording them in the AutoGRAPH device memory. The coefficient can be used to convert raw RPM data to other units;

- **p4** – adaptive level – minimum threshold of RPM readings change per one minute exceeding that forces AutoGRAPH device to make an extra record of RPM readings not waiting next periodic recording period (parameter p1). Zero adaptive level disables adaptive record of RPM readings providing that RPM data is recorded only with regular period, if it is not 0 too (see p1);

- **p5** – threshold 1 of RPM readings per 1 minute. This threshold is used by event 7 of AutoGRAPH controller;

- **p6** – turn on the digital output 1 when RPM readings exceed the threshold 1. The output 1 is turned on while the threshold 1 is exceeded:
    - 1 – enabled;
    - 0 – disabled;

- **p7** – turn on the digital output 2 when RPM readings exceed the threshold 1. The output 2 is turned on while the threshold 1 is exceeded:
    - 1 – enabled;
    - 0 – disabled;

- **p8** – threshold 2 of RPM readings per 1 minute. This threshold is used by event 8 of AutoGRAPH controller;

- **p9** – turn on the digital output 1 when RPM readings exceed the threshold 2. The output 1 is turned on while the threshold 2 is exceeded:
  - 1 – enabled;
  - 0 – disabled;
- **p10** – turn on the digital output 2 when RPM readings exceed the threshold 2. The output 2 is turned on while the threshold 2 is exceeded:
  - 1 – enabled;
  - 0 – disabled;

NOTE

Settings of event 7 and 8 are specified using the command intended for configuration of AutoGRAPH controller's events. Detailed information is given on section "Events settings".

SAMPLE COMMAND

• via SMS

```
1234zxcv FREQCONF=15,240,18,100,500,1,0,1000,0,1;
```

• via server

```
FREQCONF=15,240,18,100,500,1,0,1000,0,1;
```

SAMPLE REPLY

• on SMS:

```
FREQCONF=15,240,18,100,500,1,0,1000,0,1;
```

• on command via server:

```
FREQCONF=15,240,18,100,500,1,0,1000,0,1;
```

Following settings of RPM input is specified in the device 52500:
- Recording period of RPM readings – 15 sec;
- Averaging period of RPM readings – 240 sec;
- Coefficient – 18;
- Adaptive level – 100 rpm;
- RPM threshold 1 – 500 rpm;
- When the threshold 1 is exceeded the digital output 1 is turned on;
- RPM threshold 1 – 1000 rpm;
- When the threshold 2 is exceeded the digital output 2 is turned on.

EVENTS SETTINGS

EVENTALIASx − event alias

Command	EVENTALIASx
Description	Event alias
Request	GEVENTALIASx
Supported with firmware	7.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up device events aliases. The event alias is sent in the device notifications of event. The device has four preset events.

COMMAND FORMAT

password EVENTALIASx=alias;

parameters:
- **alias** – event alias;
- **x** – event number:
  1 – event of RPM data reception from CAN bus;
  2 – event of registration in roaming network;
  3 – event of overspeed (supported by firmware of version 10.30 and higher);
  4 – event of exceeding the allowed acceleration (supported by firmware of version 10.30 and higher);
  5 – event of triggering of high-impedance digital input (available for AutoGRAPH controllers of ver. 3.0 and higher);
  6 – event of exceeding the acceleration allowed by Eco Driving mode (available for AutoGRAPH controllers of ver. 3.0 and higher);
  7 – event of exceeding the threshold 1 by RPM readings on the RPM input (available for AutoGRAPH controllers of ver. 3.0 and higher);
  8 – event of exceeding the threshold 2 by RPM readings on the RPM input (available for AutoGRAPH controllers of ver. 3.0 and higher);

SAMPLE COMMAND
- via SMS

`1234zxcv EVENTALIAS2=Roaming;`

- via server

`EVENTALIAS2=Roaming;`

SAMPLE REPLY
- on SMS:

`52500()#EVENTALIAS2=Roaming;`

- on command via server:

`EVENTALIAS2=Roaming;`

The event 2 of the device 52500 has following alias – Roaming.

EVENTFLAGS1 (2..4) – event settings

Command	EVENTFLAGS1
Description	Event settings
Request	GEVENTFLAGS1
Supported with firmware	7.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up device events. When event triggers, the device performs specified operations. EVENTFLAGS1 command is intended to set up the event of RPM data reception from CAN bus.

COMMAND FORMAT

password EVENTFLAGS1=p1,p2,p3,p4,p5,p6,p7,p8,p9,p10;

parameters:
- **p1** – event triggers when the device receives RPM readings from vehicle CAN bus:
  - 0 – disabled;
  - 1 – enabled.
- **p2** – event triggers if no RPM readings are received from vehicle CAN bus:
  - 0 – disabled;
  - 1 – enabled.
- **p3** – send data to server if the event triggers:
  - 0 – disabled;
  - 1 – enabled.
- **p4** – send SMS to the specified phone number if the event triggers:
  - 0 – disabled;
  - 1 – enabled.
- **p5** – make a voice call if the event triggers:
  - 0 – disabled;
  - 1 – enabled.
- **p6** – make additional position data record if the event triggers:
  - 0 – disabled;
  - 1 – enabled;
- **p7-p10** – reserved;

SAMPLE COMMAND
- via SMS:
```
1234zxcv EVENTFLAGS1=1,0,0,1,0,1,0,0,0,0;
```

• via server:
```
EVENTFLAGS1=1,0,0,1,0,1,0,0,0,0;
```

SAMPLE REPLY

• on SMS command:
```
52500()#EVENTFLAGS1=1,0,0,1,0,1,0,0,0,0;
```

• on command via server:
```
EVENTFLAGS1=1,0,0,1,0,1,0,0,0,0;
```

The device 52500 is set up as follows:

p1 – 1 – event triggers when receiving RPM readings from vehicle CAN bus;

p2 – 0 – event does no trigger in case of no RPM readings from vehicle CAN bus;

p3 – 0 – data transmission to server is disabled;

p4 – 0 – sending SMS notification is enabled;

p5 – 0 – voice call is disabled;

p6 – 1 – additional position data record is enabled;

p7...p10 – 0 – reserved.

Command EVENTFLAGS2 is intended to set up the event of the device connection to roaming network. The command has following format:
```
password EVENTFLAGS2=p1,p2,p3,p4,p5,p6,p7,p8,p9,p10;
```
• **p1** – event triggers when the device connects to home network:
    0 – disabled;
    1 – enabled.

• **p2** – event triggers when the device connects to roaming network:
    0 – disabled;
    1 – enabled.

• **p3-p10** – similar to the EVENTFLAGS1 format.

Command EVENTFLAGS3 is intended to set up the event of exceeding the allowed speed. The command has following format:
```
password EVENTFLAGS3=p1,p2,p3,p4,p5,p6,p7,p8,p9,p10;
```
• **p1** – event triggers in case of overspeed:
    0 – disabled;
    1 – enabled.

• **p2** – event triggers when vehicle speed drops below the allowed speed:
    0 – disabled;
    1 – enabled.

• **p3-p10** – similar to the EVENTFLAGS1 format.

Command EVENTFLAGS4 is intended to set up the event of exceeding the allowed acceleration. The command has following format:

`password EVENTFLAGS4=p1,p2,p3,p4,p5,p6,p7,p8,p9,p10;`

• **p1** – event triggers when vehicle acceleration exceeds the allowed value:

> 0 – disabled;
>
> 1 – enabled.

• **p2** – event triggers when vehicle acceleration drops below the allowed value:

> 0 – disabled;
>
> 1 – enabled.

• **p3-p10** – similar to the EVENTFLAGS1 format.

Command EVENTFLAGS5 is intended to set up the event of triggering the high-impedance digital input (available for AutoGRAPH controllers of ver. 3.0 and higher). The command has following format:

`password EVENTFLAGS5=p1,p2,p3,p4,p5,p6,p7,p8,p9,p10;`

• **p1** – event triggers when high-impedance digital input connects to «+Vin»:

> 0 – disabled;
>
> 1 – enabled.

• **p2** – event triggers when high-impedance digital input connects to «-Vin» (when the input is disconnected):

> 0 – disabled;
>
> 1 – enabled.

• **p3-p10** – similar to the EVENTFLAGS1 format.

> **NOTE**
>
> *The high-impedance input has different modes of operation which can be also set up using remote commands. Detailed information is given in section "Digital inputs settings".*

Command EVENTFLAGS6 is intended to set up the event of exceeding the acceleration threshold allowed by Eco Driving mode. The command has following format:

`password EVENTFLAGS6=p1,p2,p3,p4,p5,p6,p7,p8,p9,p10;`

• **p1** – event triggers when even one Eco driving thresholds is exceeded:

> 0 – disabled;
>
> 1 – enabled.

• **p2** – event triggers when Eco driving is detected – all thresholds are not exceeded:

> 0 – disabled;
>
> 1 – enabled.

• **p3-p10** – similar to the EVENTFLAGS1 format.

NOTE

Thresholds of event 6 are set up using the command intended for Eco driving mode configuration. Detailed information is given in section "Eco driving mode settings".

Command EVENTFLAGS7 is intended to set up the event of exceeding the threshold 1 by RPM readings on the RPM input:

```
password EVENTFLAGS7=p1,p2,p3,p4,p5,p6,p7,p8,p9,p10;
```

- **p1** – event triggers when readings on RPM input exceed the threshold 1:
    - 0 – disabled;
    - 1 – enabled.

- **p2** – event triggers when readings on RPM input drop below the threshold 1:
    - 0 – disabled;
    - 1 – enabled.

- **p3-p10** – similar to the EVENTFLAGS1 format.

Command EVENTFLAGS8 is intended to set up the event of exceeding the threshold 2 by RPM readings on the RPM input:

```
password EVENTFLAGS8=p1,p2,p3,p4,p5,p6,p7,p8,p9,p10;
```

- **p1** – event triggers when readings on RPM input exceed the threshold 2:
    - 0 – disabled;
    - 1 – enabled.

- **p2** – event triggers when readings on RPM input drop below the threshold q:
    - 0 – disabled;
    - 1 – enabled.

- **p3-p10** – similar to the EVENTFLAGS1 format.

NOTE

Thresholds of event 7 and 8 are set up using the command intended for RPM input configuration. Detailed information is given on section "RPM input".

EVENTTELNUMx − phone number for notification of events

Command	EVENTTELNUMx
Description	Phone number for notification of events
Request	GEVENTTELNUMx
Supported with firmware	7.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up phone numbers which the device will send notifications of events.

COMMAND FORMAT

password EVENTTELNUMx=tel_number;

parameters:
- **tel_number** – phone number. The phone number must be specified without spaces and with prefix for national call (+7 or 8);
- **x** – event number:

  1 – event of RPM data reception from CAN bus;

  2 – event of registration in roaming network;

  3 – event of overspeed (supported by firmware of version 10.30 and higher);

  4 – event of exceeding the allowed acceleration (supported by firmware of version 10.30 and higher);

  5 – event of triggering of high-impedance digital input (available for AutoGRAPH controllers of ver. 3.0 and higher);

  6 – event of exceeding the acceleration allowed by Eco Driving mode (available for AutoGRAPH controllers of ver. 3.0 and higher);

  7 – event of exceeding the threshold 1 by RPM readings on the RPM input (available for AutoGRAPH controllers of ver. 3.0 and higher);

  8 – event of exceeding the threshold 2 by RPM readings on the RPM input (available for AutoGRAPH controllers of ver. 3.0 and higher);

SAMPLE COMMAND

- via SMS

```
1234zxcv EVENTTELNUM1=+79000000
000;
```

- via server

```
EVENTTELNUM1=+79000000000;
```

SAMPLE REPLY

- on SMS:

```
52500()#EVENTTELNUM1=+79000000
000;
```

- on command via server:

```
EVENTTELNUM1=+79000000000;
```

The device 52500 sends notifications of the event 1 to phone number +79000000000.

SPEEDFLAGS – outputs triggering in case of overspeed

Command	SPEEDFLAGS
Description	Output triggering in case of overspeed
Request	GSPEEDFLAGS
Supported with firmware	5.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up operation of device digital outputs in case of overspeed.

COMMAND FORMAT

password SPEEDFLAGS=param1,param2,param3;

parameters:
- **param1** – output 1 triggering in case of overspeed:
  0 – disables triggering;
  1 – enables triggering. When vehicle speed exceeds the speed limit, the output switches to high level state. When vehicle speed drops down the speed limit, the output switches to low level state.
- **param2** – output 2 triggering in case of overspeed:
  0 – disables triggering;
  1 – enables triggering. When vehicle speed exceeds the speed limit, the output switches to high level state. When vehicle speed drops down the speed limit, the output switches to low level state.
- **param3** – reserved.

SAMPLE COMMAND
- via SMS
```
1234zxcv SPEEDFLAGS=1,0,0;
```

- via server
```
SPEEDFLAGS=1,0,0;
```

SAMPLE REPLY
- on SMS:
```
52500()#GPRS:SPEEDFLAGS=1,0,0;
```

- on command via server:
```
SPEEDFLAGS=1,0,0;
```

The device 52500 switches the output 1 to high state in case of overspeed.

SPEEDPOROG − speed limit

Command	SPEEDPOROG
Description	Speed limit
Request	GSPEEDPOROG
Supported with firmware	5.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up a speed limit. When vehicle spped exceeds the specified speed limit, the event of overspeed triggers.

COMMAND FORMAT

password SPEEDPOROG=speed;

parameters:
• **speed** – speed limit in km/h.

SAMPLE COMMAND

• via SMS
`1234zxcv SPEEDPOROG=110.0;`

• via server
`SPEEDPOROG=110.0;`

SAMPLE REPLY

• on SMS:
`52500()#SPEEDPOROG=110.0;`

• on command via server:
`SPEEDPOROG=110.0;`

Speed limitation is 110 km/h.

ACCELFLAGS − outputs triggering in case of acceleration exceeding

Command	ACCELFLAGS
Description	Output triggering in case of acceleration exceeding
Request	GACCELFLAGS
Supported with firmware	5.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up operation of device digital outputs in case of acceleration exceeding by vehicle.

COMMAND FORMAT

password ACCELFLAGS=param1,param2,param3;

parameters:
- **param1** –output 1 triggering in case of acceleration exceeding by vehicle:
  0 – disables triggering;
  1 – enables triggering. When vehicle acceleration exceeds the specified limit, the output switches to high level state. When vehicle acceleration drops down the limit, the output switches to low level state.

- **param2** – output 2 triggering in case of acceleration exceeding by vehicle:
  0 – disables triggering;
  1 – enables triggering. When vehicle acceleration exceeds the specified limit, the output switches to high level state. When vehicle acceleration drops down the limit, the output switches to low level state.

- **param3** – reserved.

SAMPLE COMMAND
- via SMS
```
1234zxcv ACCELFLAGS=1,0,0;
```

- via server
```
ACCELFLAGS=1,0,0;
```

SAMPLE REPLY
- on SMS:
```
52500()#GPRS:SPEEDFLAGS=1,0,0;
```

- on command via server:
```
ACCELFLAGS=1,0,0;
```

The device 52500 switches the output 1 to high state in case of acceleration exceeding.

ACCELPOROG – acceleration limit

Command	ACCELPOROG
Description	Acceleration limit
Request	GSPEEDPOROG
Supported with firmware	5.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up an acceleration limit. When vehicle acceleration exceeds the specified acceleration limit, the event of acceleration exceeding triggers.

COMMAND FORMAT

password ACCELPOROG=accel;

parameters:
• **accel** – acceleration limit in m^2/s.

SAMPLE COMMAND
• via SMS
```
1234zxcv ACCELPOROG=10;
```

• via server
```
ACCELPOROG=10;
```

SAMPLE REPLY
• on SMS:
```
52500()#ACCELPOROG=10;
```

• on command via server:
```
ACCELPOROG=10;
```

Acceleration limit is 10 m^2/s.

CHECK POINT SETTINGS

CPALIASx – check point alias

Command	CPALIASx
Description	Check point alias
Request	GCPALIASx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up check points names. Check points aliases are used to identify notifications of entrance to points or exit from them which are sent by the device.

COMMAND FORMAT

password CPALIASx=alias;

parameters:
- **alias** – check point alias. The alias can contain up to 8 characters – lowercase and uppercase letters of Latin alphabet as well as digits from 0 to 9 and space character.
- **x** – check point number: 1..3.

SAMPLE COMMAND
- via SMS
```
1234zxcv CPALIAS1=Point 1;
```

- via server
```
CPALIAS1=Point 1;
```

SAMPLE REPLY
- on SMS:
```
52500()#CPALIAS1=Point 1;
```

- on command via server:
```
CPALIAS1=Point 1;
```

The check point 1 of the device 52500 has alias – Point 1.

CPTELNUMx − phone number of check point

Command	CPTELNUMx
Description	Phone number of check point
Request	GCPTELNUMx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up phone number which the device will send notifications of entrance to check point or exit from it.

COMMAND FORMAT

password CPTELNUMx=phone;

parameters:
- **tel_number** – phone number. The phone number must be specified without spaces and with prefix for national call (+7 or 8);
- **x** – check point number: 1...3;

SAMPLE COMMAND
- via SMS
```
1234zxcv CPTELNUM2=+79000000000;
```

- via server
```
CPTELNUM2=+79000000000;
```

SAMPLE REPLY
- on SMS:
```
52500()#GPRS:CPTELNUM2=+79000000000;
```

- on command via server:
```
CPTELNUM2=+79000000000;
```

The device 52500 sends notification to phone number +79000000000 when vehicle enters to check point 2 or exit from it.

CONTROLPOINTx – check point coordinates

Command	CONTROLPOINTx
Description	Check point coordinates
Request	GCPTELNUMx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up coordinates of check point center.

COMMAND FORMAT

password CONTROLPOINTx=center;

parameters:
- **center** – coordinates of check point center. To setup check point coordinates, specify following parameters comma separated and in the listed order:

  Lat – latitude in the format GGGMMmmmmm (GGG – 2 digit value of degrees, MM – 2-digit value of minutes, mmmmm – 5-digit splits of minutes. Splits of minutes must be rounded to next 0 or 5;

  N – north or south latitude (N – if north, S – if south);

  Lon – longitude in the format GGGMMmmmmm (GGG – 2 or 3-digit value of degrees, MM – 2-digit value of minutes, mmmmm – 5-digit splits of minutes. Splits of minutes must be rounded to next 0 or 5;

  E – east or west longitude (E – if east, W – if west);
- **x** – check point number: 1...3;

SAMPLE COMMAND
- via SMS
```
1234zxcv CONTROLPOINT1=545996595,N,825755820,E;
```

- via server
```
CONTROLPOINT1=545996595,N,825755820,E;
```

SAMPLE REPLY
- on SMS:
```
52500()#CONTROLPOINT1=545996595,N,825755820,E;
```

- on command via server:
```
CONTROLPOINT1=545996595,N,825755820,E;
```

Check point 1 has following coordinates of center: 54 degrees, 59.96595 minutes of north latitude and 82 degrees, 57.55820 minutes of east longitude.

RADIUSx – check point radius

Command	RADIUSx
Description	Check point radius
Request	GRADIUSx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up check point radius.

COMMAND FORMAT

password RADIUSx=radius;

parameters:
• **radius** – check point radius in meters;
• **x** – check point number: 1...3;

SAMPLE COMMAND
• via SMS
```
1234zxcv RADIUS2=30;
```

• via server
```
RADIUS2=30;
```

SAMPLE REPLY
• on SMS:
```
52500()#GPRS:RADIUS2=30;
```

• on command via server:
```
RADIUS2=30;
```

Radius of check point 2 is 30 meters.

CONTROLFLAGSx – responses to check point crossing

Command	CONTROLFLAGSx
Description	Device responses to check point crossing
Request	GCONTROLFLAGSx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up device responses to check point crossing – entering to a point and exiting from it.

COMMAND FORMAT

password CONTROLFLAGSx=flags;

parameters:
- **flags** – check point settings in the following order: p1,p2,p3,p4,p5,p6,p7,p8,p9,p10,p11:
  p1 – pulse to digital output 1 when vehicle enters to check point:
  >0 – disabled;
  >1 –enabled.

  p2 – pulse to digital output 1 when vehicle exits from check point:
  >0 – disabled;
  >1 – enabled.

  p3 – pulse to digital output 2 when vehicle enters to check point:
  >0 – disabled;
  >1 – enabled.

  p4 – pulse to digital output 2 when vehicle exits from check point:
  >0 – disabled;
  >1 – enabled.

  p5 – start data transmission to server when vehicle enters to check point:
  >0 – disabled;
  >1 – enabled.

  p6 – start data transmission to server when vehicle exits from check point:
  >0 – disabled;
  >1 – enabled;

  p7 – send SMS notification when vehicle enters to check point:
  >0 – disabled;
  >1 – enabled.

p8 – send SMS notification when vehicle exits from check point:

0 – disabled;

1 – enabled;

p9 – check point processing delay. This parameter is intended to filter accidental entrances and exits from check point. The delay must be specified in seconds, minimum value is 0, maximum value is 250 seconds;

p10 – number of device digital input which will be closed when vehicle enters to check point: 1...6. Specify 0 to disable the option;

p11 – number of device digital input which will be closed when vehicle exits from check point: 1...6. Specify 0 to disable the option;

• **x** – check point number: 1...3.

....

Fields p10 and p11 are supported by AutoGRAPH controller with firmware of version 10.44 and higher. Devices with firmware of version lower than 10.44 do not process those parameters. So it is recommended set them to 0.

....

SAMPLE COMMAND

• via SMS

```
1234zxcv CONTROLFLAGS2=0,1,1,0,0,0,1,0,15,2,3;
```

• via server

```
CONTROLFLAGS2=0,1,1,0,0,0,1,0,15,2,3;
```

SAMPLE REPLY

• on SMS:

```
52500()#CONTROLFLAGS2=0,1,1,0,0,0,1,0,15,2,3;
```

• on command via server:

```
CONTROLFLAGS2=0,1,1,0,0,0,1,0,15,2,3;
```

Check point 2 of the device 52500 is configured as follows:

p1 – 0 – the device does not send pulse to output 1 when vehicle enters to check point 2;

p2 – 1 – the device sends pulse to output 1 when vehicle exits from check point 2;

p3 – 1 – the device sends pulse to output 2 when vehicle enters to check point 2;

p4 – 0 – the device does not send pulse to output 2 when vehicle exits from check point 2;

p5 – 0 – data transmission to server is disabled for the event of entrance to check point 2;

p6 – 0 – data transmission to server is disabled for the event of exit from check point 2;

p7 – 1 – the device sends SMS notification when vehicle enters to check point 2;

p8 – 0 – the device does not send SMS notification when vehicle exits from check point 2;

p9 – 15 – entrance to check point and exit from it are detected with 15 seconds delay;

p10 – 2 – the device closes the digital input 2 when vehicle enters to check point 2;

p11 – 3 – the device closes the digital input 3 when vehicle exits from check point 2;

DYNAMIC CHECK POINT SETTINGS

DPALIASx – dynamic check point alias

Command	DPALIASx
Description	Dynamic check point alias
Request	GDPALIASx
Supported with firmware	7.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up dynamic check points names. Check points aliases are used to identify notifications of entrance to points or exit from them which are sent by the device.

COMMAND FORMAT

password DPALIASx=name;

parameters:
- **name** – dynamic check point alias. The alias can contain up to 8 characters – lowercase and uppercase letters of Latin alphabet as well as digits from 0 to 9 and space character.
- **x** – dynamic check point number: 1..3.

SAMPLE COMMAND
- via SMS
```
1234zxcv DPALIAS2=DPoint 2;
```

- via server
```
DPALIAS2=DPoint 2;
```

SAMPLE REPLY
- on SMS:
```
52500()#DPALIAS2=DPoint 2;
```

- on command via server:
```
DPALIAS2=DPoint 2;
```

The dynamic check point 2 of the device 52500 has alias – DPoint 2.

DPOINTx – dynamic check point setup

Command	DPOINTx
Description	Dynamic check point setup
Request	GDPOINTx
Supported with firmware	7.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable dynamic check points. The command *GDPOINTx;* requests coordinates of dynamic point center. The device also sends dynamic point coordinates in reply on the *DPOINTx;* command.

COMMAND FORMAT

password DPOINTx=param1;

parameters:
- **param1:**
  1 – enables dynamic check point and sets vehicle current position as the check point center;
  0 – disables check point that has been enabled previously;
- **x** – dynamic check point number: 1..3.

SAMPLE COMMAND

- via SMS
```
1234zxcv DPOINT1=1;
```

- via server
```
DPOINT1=1;
```

SAMPLE REPLY

- on SMS:
```
52500()#DPOINT1=545996594,N,82575582,E;
```

- on command via server:
```
DPOINT1=545996594,N,82575582,E;
```

The dynamic check point 1 is enabled in the device 52500.

DPTELNUMx – phone number of dynamic check point

Command	DPTELNUMx
Description	Phone number of dynamic check point
Request	GDPTELNUMx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up phone number which the device will send notifications of entrance to dynamic check point or exit from it.

COMMAND FORMAT

password DPTELNUMx=tel_number;

parameters:
- **tel_number** – phone number. The phone number must be specified without spaces and with prefix for national call (+7 or 8);
- **x** – dynamic check point number: 1...3;

SAMPLE COMMAND
- via SMS
```
1234zxcv DPTELNUM2=89000000000;
```

- via server
```
DPTELNUM2=89000000000;
```

SAMPLE REPLY
- on SMS:
```
52500()#DPTELNUM2=89000000000;
```

- on command via server:
```
DPTELNUM2=89000000000;
```

The device 52500 sends notification to phone number 89000000000 when vehicle enters to dynamic check point 2 or exits from it.

RADIUSx – dynamic check point radius

Command	DPRADIUSx
Description	Dynamic check point radius
Request	GDPRADIUSx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up dynamic check point radius.

COMMAND FORMAT

password DPRADIUSx=radius;

parameters:
- **radius** – dynamic check point radius in meters. Minimal value is 50 meters, maximum value is 20 000 000 meters;
- **x** – dynamic check point number: 1...3;

SAMPLE COMMAND
- via SMS
```
1234zxcv DPRADIUS1=50;
```

- via server
```
DPRADIUS1=50;
```

SAMPLE REPLY
- on SMS:
```
52500()#DPRADIUS1=50;
```

- on command via server:
```
DPRADIUS1=50;
```

Radius of dynamic check point 1 is 50 meters.

DPFLAGSx − responses to dynamic check point crossing

Command	DPFLAGSx
Description	Device responses to dynamic check point crossing
Request	GDPFLAGSx
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up device responses to dynamic check point crossing – entering to a point and exiting from it.

COMMAND FORMAT

password DPFLAGSx=flags;

parameters:
- **flags** – check point settings in the following order: p1,p2,p3,p4,p5,p6,p7,p8,p9,p10,p11, p12, p13:

  p1 – pulse to digital output 1 when vehicle enters to dynamic check point:
  - 0 – disabled;
  - 1 –enabled.

  p2 – pulse to digital output 1 when vehicle exits from dynamic check point:
  - 0 – disabled;
  - 1 – enabled.

  p3 – pulse to digital output 2 when vehicle enters to dynamic check point:
  - 0 – disabled;
  - 1 – enabled.

  p4 – pulse to digital output 2 when vehicle exits from dynamic check point:
  - 0 – disabled;
  - 1 – enabled.

  p5 – start data transmission to server when vehicle enters to dynamic check point:
  - 0 – disabled;
  - 1 – enabled.

  p6 – start data transmission to server when vehicle exits from dynamic check point:
  - 0 – disabled;
  - 1 – enabled;

  p7 – send SMS notification when vehicle enters to dynamic check point:
  - 0 – disabled;
  - 1 – enabled.

  p8 – send SMS notification when vehicle exits from dynamic check point:
  0 – disabled;
  1 – enabled;

p9 – dynamic check point processing delay. This parameter is intended to filter accidental entrance sand exits from check point. The delay must be specified in seconds, minimum value is 0, maximum value is 250 seconds;

p10 – dynamic check point setup:

   0 – by control command DPOINTx;

   1 – by digital input 1 triggering;

   2 – by digital input 2 triggering;

   3 – by digital input 3 triggering;

   4 – by digital input 4 triggering;

   5 – by digital input 5 triggering;

   6 – by digital input 6 triggering;

   7 – by digital input 7 triggering;

   8 – by digital input 8 triggering;

   9 – by triggering the event 1 (RPM readings from CAN bus);

   10 – by triggering the event 2 (Connection to roaming network);

   11 – by triggering the event 3 (Speed limitation);

   12 – by triggering the event 4 (Acceleration limitation);

p11 – dynamic check point reset:

   0 – by control command DPOINTx;

   1 – by digital input 1 triggering;

   2 – by digital input 2 triggering;

   3 – by digital input 3 triggering;

   4 – by digital input 4 triggering;

   5 – by digital input 5 triggering;

   6 – by digital input 6 triggering;

   7 – by digital input 7 triggering;

   8 – by digital input 8 triggering;

   9 – by triggering the event 1 (RPM readings from CAN bus);

   10 – by triggering the event 2 (Connection to roaming network);

   11 – by triggering the event 3 (Speed limitation);

   12 – by triggering the event 4 (Acceleration limitation);

p12 – number of device digital input which will be closed when vehicle enters to dynamic check point: 1...6. Specify 0 to disable the option;

p13 – number of device digital input which will be closed when vehicle exits from dynamic check point: 1...6. Specify 0 to disable the option;

• **x** – dynamic check point number: 1...3.

NOTE

Fields p12 and p13 are supported by AutoGRAPH controller with firmware of version 10.44 and higher. Devices with firmware of version lower than 10.44 do not process these parameters. So it is recommended to set them to 0.

SAMPLE COMMAND

• via SMS

```
1234zxcv DPFLAGS1=0,1,0,0,0,1,0,0,60,1,2,4,3;
```

• via server

```
DPFLAGS1=0,1,0,0,0,1,0,0,60,1,2,4,3;
```

SAMPLE REPLY

• on SMS:

```
52500()#DPFLAGS1=0,1,0,0,0,1,0,0,60,1,2,4,3;
```

• on command via server:

```
DPFLAGS1=0,1,0,0,0,1,0,0,60,1,2,4,3;
```

Check point 1 of the device 52500 is configured as follows:

p1 – 0 – the device does not send pulse to output 1 when vehicle enters to dynamic check point 1;

p2 – 1 – the device sends pulse to output 1 when vehicle exits from dynamic check point 1;

p3 – 0 – the device does not send pulse to output 2 when vehicle enters to dynamic check point 1;

p4 – 0 – the device does not send pulse to output 2 when vehicle exits from dynamic check point 1;

p5 – 0 – data transmission to server is disabled for event of entrance to dynamic check point 1;

p6 – 1 – data transmission to server is enabled for event of exit from dynamic check point 1;

p7 – 0 – the device does not send SMS notification when vehicle enters to dynamic check point 1;

p8 – 0 – the device does not send SMS notification when vehicle exits from dynamic check point 1;

p9 – 60 – entrance to check point and exit from it are detected with 60 seconds delay;

p10 – 1 – dynamic check point 1 is set by the input 1 triggering;

p11 – 2 – dynamic check point 1 is reset by the input 12 triggering;

p12 – 4 – the device closes the digital input 4 when vehicle enters to dynamic check point 1;

p13 – 3 – the device closes the digital input 3 when vehicle exits from dynamic check point 1;

GNSS RECEIVER SETTINGS

GLONASSMODE – GNSS receiver settings

Command	GLONASSMODE
Description	GNSS receiver settings
Request	GGLONASSMODE
Supported with firmware	5.6 and higher
Setting	Available via data server and SMS
Comment	The command is intended to configure source of position data: internal or external GNSS receiver.

COMMAND FORMAT

password GLONASSMODE=param;

parameters:

• **param** – source of position data:

0 – use internal GNSS receiver;

for AutoGRAPH device without internal receiver:

1, 2 – use external GNSS receiver, switch the external receiver to GLONASS/GPS hybrid mode;

3 – use external GNSS receiver, switch the external receiver to "Only GLONASS" mode;

4 – use external GNSS receiver, switch the external receiver to "Only GPS" mode;

for AutoGRAPH devices with internal receiver:

5 – use internal GNSS receiver, switch the internal receiver to GLONASS/GPS hybrid mode;

6 – use internal GNSS receiver, switch the internal receiver to "Only GLONASS" mode;

7 – use internal GNSS receiver, switch the internal receiver to "Only GPS" mode;

8 – use external receiver connected to RS-232 bus of the AutoGRAPH device and transferring data in NMEA 0183 format (the option is supported by AutoGRAPH devices with firmware of version AGXL-11.31 and higher).

SAMPLE COMMAND

• via SMS:

`1234zxcv GLONASSMODE=0;`

• via server:

`GLONASSMODE=0;`

SAMPLE REPLY

• on SMS:

`52500()#GLONASSMODE=0;`

• on command via server:

`GLONASSMODE=0;`

The device 52500 receives position data from internal GNSS receiver.

NTRIP — differential correction data loading

Command	NTRIP
Description	Differential correction data loading
Request	GNTRIP
Supported with firmware	AGEX-12.15 and higher
Setting	Available via data server and SMS
Comment	The command is intended to configure parameters of differential correction data loading. The differential correction data is loaded via GPRS and available only for AutoGRAPH-GSM devices equipped with GSM modem produced by Telit and u-blox MAX-M8 GNSS receiver.

COMMAND FORMAT

password NTRIP=mode,addr,port,user,password;

parameters:
- **mode** – operation mode. By default the mode 0 – RAW RTCM stream is set. Current version of the device firmware supports only the default mode;
- **addr** – address of the server from which the controller downloads differential correction data;
- **port** – server port number;
- **user** – user name used to load differential correction data. If user name is not required, leave the field empty;
- **password** – password used to load differential correction data. If password is not required, leave the field empty;

SAMPLE COMMAND
- via SMS:
```
1234zxcv NTRIP=0,195.73.99.999,
2101,,;
```

- via server:
```
NTRIP=0,195.73.99.999,2101,,;
```

SAMPLE REPLY
- on SMS:
```
52500()#NTRIP=0,195.73.99.999,
2101,,;
```

- on command via server:
```
NTRIP=0,195.73.99.999,2101,,;
```

The device 52500 is configured to load differential correction data from server 195.73.99.999, used port number – 2101, the loading mode RAW RTCM stream. User login and password is not required.

BLUETOOTH SETTINGS

BLEADDR − Bluetooth sensor addresses.

Command	BLEADDR
Description	Sensor addresses connected via Bluetooth
Request	GBLEADDR
Supported with firmware	AGEX-12.12 and higher
Setting	Available via data server and SMS
Comment	Команда позволяет установить адреса датчиков для подключения по Bluetooth. Текущая микропрограмма контроллера поддерживает работу с датчиками уровня топлива «TKLS» производства ООО «ТехноКом» по Bluetooth

COMMAND FORMAT

password BLEADDR=addr1,addr2,addr3,addr4,addr5,addr6, addr7,addr8;

parameters:
- **addr1...addr8** – 7 (8)-digit serial numbers of sensors which are connected to AutoGRAPH controller via Bluetooth.

SAMPLE COMMAND
- via SMS:
```
1234zxcv BLEADDR=10000424,10000425,10000426,00000000,00000000,
00000000,00000000,00000000;
```

- via server:
```
BLEADDR=10000424,10000425,10000426,00000000,00000000,
00000000,00000000,00000000;
```

SAMPLE REPLY
- on SMS:
```
52500()#BLEADDR=10000424,10000425,10000426,00000000,00000000,
00000000,00000000,00000000;
```

- on command via server:
```
BLEADDR=10000424,10000425,10000426,00000000,00000000,
00000000,00000000,00000000;
```

The device 52500 is configured to operate with three sensors via Bluetooth. Serial numbers of the sensors – 10000424, 10000425, 10000426.

1-WIRE BUS SETTINGS

ONLYBUTTON − enable only one iButton device on 1-Wire bus

Command	ONLYBUTTON
Description	Enable only one iButton device on 1-Wire bus
Request	GONLYBUTTON
Supported with firmware	5.0 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable connection of only one iButton device to 1-Wire bus.

COMMAND FORMAT

password ONLYBUTTON=status;

parameters:
- **status** – only one iButton device can be connected to 1-Wire bus:
  Y – enabled;
  N – disabled. In this case the AutoGRAPH device can operate with other devices via 1-Wire bus, not only iButton devices;

SAMPLE COMMAND
- via SMS
```
1234zxcv ONLYBUTTON=Y;
```

- via server
```
ONLYBUTTON=Y;
```

SAMPLE REPLY
- on SMS:
```
52500()#ONLYBUTTON=Y;
```

- on command via server:
```
ONLYBUTTON=Y;
```

The device 52500 is set up to operate with only one iButton device via 1-Wire.

IBUTTADDR − addresses of iButton devices

Command	IBUTTADDR
Description	Addresses of iButton devices
Request	GIBUTTADDR
Supported with firmware	5.6 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up addresses of iButton devices which are connected to the AutoGRAPH device 1-Wire bus. AutoGRAPH devices can operate with only one iButton device without preset address via 1-Wire or up to 4 iButton devices with preset addresses. In this case the AutoGRAPH device will record only IDs of allowed devices and skip connection of unauthorized iButton devices.

COMMAND FORMAT

password IBUTTADDR=addr1,addr2,addr3,addr4;

parameters:
- **addr1...addr4** – addresses of allowed iButton devices in HEX format. All parameters must be specified. Otherwise the command won't be processed. Empty fields must be filled by FFFFFFFFFFFF or 000000000000.

SAMPLE COMMAND
- via SMS
```
1234zxcv IBUTTADDR=00000F60C6E4,000000000000,000000000000,
000000000000;
```

- via server
```
BUTTADDR=00000F60C6E4,000000000000,000000000000,000000000000;
```

SAMPLE REPLY
- on SMS:
```
52500()#IBUTTADDR=00000F60C6E4,000000000000,000000000000,00000000
0000;
```

- on command via server:
```
IBUTTADDR=00000F60C6E4,000000000000,000000000000,000000000000;
```

The device 52500 is set up to operate with one iButton device with address 00000F60C6E4.

IBUTTOUT − indication of iButton ID reading

Command	IBUTTOUT
Description	Indication of iButton ID reading
Request	GIBUTTOUT
Supported with firmware	5.5 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up indication of iButton ID reading using the device digital outputs.

COMMAND FORMAT

password IBUTTOUT=out1,out2;

parameters:
• **out1** – pulse to digital output 1 when reading iButton ID.
  Y – enabled;
  N – disabled.
• **out2** – pulse to digital output 2 when reading iButton ID.
  Y – enabled;
  N – disabled.

SAMPLE COMMAND

• via SMS
```
1234zxcv IBUTTOUT=Y,N;
```

• via server
```
IBUTTOUT=Y,N;
```

SAMPLE REPLY

• on SMS:
```
52500()#IBUTTOUT=Y,N;
```

• on command via server:
```
IBUTTOUT=Y,N;
```

The device 52500 is set up to send a pulse to digital output 1 and not to send a pulse to digital output 2 when reading ID of iButton device.

RFIDMASK − RFID tag indication

Command	RFIDMASK
Description	RFID tag indication
Request	GRFIDMASK
Supported with firmware	10.60 and higher
Setting	Available via data server and SMS
Comment	The command is intended to disable indication of RFID tag connection on digital outputs.

COMMAND FORMAT

password RFIDMASK=mask;

parameters:
• **mask** – RFID tag mask which reading is not to be indicated. The mask must be specified in hexadecimal form using only uppercase letters.

SAMPLE COMMAND

• via SMS
```
1234zxcv RFIDMASK=1FFF;
```

• via server
```
RFIDMASK=1FFF;
```

SAMPLE REPLY

• on SMS:
```
52500()#RFIDMASK=1FFF;
```

• on command via server:
```
RFIDMASK=1FFF;
```

The device 52500 is set up not to indicate reading of any RFID tag with mask 1FFF.

IBUTTMODE – mode of operation with iButton devices

Command	IBUTTMODE
Description	Mode of operation with iButton devices
Request	GIBUTTMODE
Supported with firmware	10.12 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up mode of AutoGRAPH device operation with iButton devices.

COMMAND FORMAT

password IBUTTMODE=mode,indication;

parameters:
- **mode** – iButton ID reading mode.
  1 – normal mode – in this mode the device records iButton ID and time of its registration;
  2 – switching mode – in this mode rereading of the card's or key's ID causes completion of the trip that has begun during initial reading. Reading of keys or cards with different IDs automatically completes the current trip and begins a new one;
  3 – continuous mode (card in reader) – in this mode the device continuously reads card's ID. For the purposes of reducing traffic the ID is recorded to the device's memory once a minute. Trip will continue until the card is in the reader.
- **indication** – iButton reading indication in switching and continuous modes:
  1 – indicate on digital output 1;
  2 – indicate on digital output 2;

SAMPLE COMMAND
- via SMS
`1234zxcv IBUTTMODE=1,1;`

- via server
`IBUTTMODE=1,1;`

SAMPLE REPLY
- on SMS:
`52500()#IBUTTMODE=1,1;`

- on command via server:
`IBUTTMODE=1,1;`

The device 52500 is set up to read iButton IDs in normal mode, therefore the second parameter of the command does not processed.

ONLYTEMP – enable only one temperature sensor on 1-Wire bus

Command	ONLYTEMP
Description	Enable only one temperature sensor on 1-Wire bus
Request	GONLYTEMP
Supported with firmware	5.5 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable connection of only one temperature sensor to 1-Wire bus of the AutoGRAPH device. In this mode the AutoGRAPH device will operate with any temperature sensor connected to 1-Wire bus independent from its address.

COMMAND FORMAT

password ONLYTEMP=param;

parameters:
• **param** – only one temperature sensor on 1-Wire bus:
  Y – enabled;
  N – disabled. In this mode up to 8 temperature sensors can be connected to the device.

SAMPLE COMMAND
• via SMS
`1234zxcv ONLYTEMP=Y;`

• via server
`ONLYTEMP=Y;`

SAMPLE REPLY
• on SMS:
`52500()#ONLYTEMP=Y;`

• on command via server:
`ONLYTEMP=Y;`

The device 52500 is set up to operate with only one temperature sensor via 1-Wire bus.

TEMPADDR – temperature sensors addresses

Command	TEMPADDR
Description	Temperature sensors addresses
Request	GTEMPADDR
Supported with firmware	5.5 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up addresses of temperature sensors connected to the device 1-Wire bus. AutoGRAPH devices can operate with only one temperature sensor with any address via 1-Wire or up to 8 temperature sensors with preset addresses.

COMMAND FORMAT

password TEMPADDR=addr1,addr2,addr3,addr4,addr5,addr6,addr7,addr8;

parameters:
• **addr1...addr8** – 1-Wire temperature sensor addresses in HEX format. All parameters must be specified. Otherwise the command won't be processed. Empty fields must be filled by FFFFFFFFFFFF or 000000000000.

SAMPLE COMMAND

• via SMS
```
1234zxcv TEMPADDR=00000F60C6E4,000000000000,000000000000,
000000000000,000000000000,000000000000,000000000000,000000000000;
```

• via server
```
TEMPADDR=00000F60C6E4,000000000000,000000000000,000000000000,
000000000000,000000000000,000000000000,000000000000;
```

SAMPLE REPLY

• on SMS:
```
52500()#TEMPADDR=00000F60C6E4,000000000000,000000000000,
000000000000,000000000000,000000000000,000000000000,000000000000;
```

• on command via server:
```
TEMPADDR=00000F60C6E4,000000000000,000000000000,000000000000,
000000000000,000000000000,000000000000,000000000000;
```

The device 52500 is set up to operate with a temperature sensor with address 00000F60C6E4 via 1-Wire bus.

RS-485 BUS SETTINGS

LLSADDR — network addresses of fuel level sensors

Command	LLSADDR
Description	Network addresses of fuel level sensors connected via RS-485
Request	GLLSADDR
Supported with firmware	5.3 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up addresses of fuel level sensors which are connected to the device RS-485 bus.

COMMAND FORMAT

password LLSADDR=lls1,lls2,lls3,lls4,lls5,lls6,lls7,lls8;

parameters:
- **lls1...lls8** – addresses of fuel level sensors: from 1 to 255. All parameters must be specified. Otherwise the command won't be processed. Empty fields must be filled by 255.

SAMPLE COMMAND
- via SMS
```
1234zxcv LLSADDR=50,100,255,255,255,255,255,255;
```

- via server
```
LLSADDR=50,100,255,255,255,255,255,255;
```

SAMPLE REPLY
- on SMS:
```
52500()#LLSADDR=50,100,255,255,255,255,255,255;
```

- on command via server:
```
LLSADDR=50,100,255,255,255,255,255,255;
```

The device 52500 is set up to operate with fuel level sensors with addresses 50 and 100.

LLSPERIOD – fuel level data recording period

Command	LLSPERIOD
Description	Fuel level data recording period
Request	GLLSPERIOD
Supported with firmware	5.3 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up period of fuel level data recording.

COMMAND FORMAT

password LLSPERIOD=period1,period2;

parameters:
- **period1** – period of fuel level data recording from sensors 1-4;
- **period2** – period of fuel level data recording from sensors 5-8;

The recording period ranges from 10 to 3600 seconds, 0 disables fuel level data recording.

SAMPLE COMMAND
- via SMS
```
1234zxcv LLSPERIOD=20,0;
```

- via server
```
LLSPERIOD=20,0;
```

SAMPLE REPLY
- on SMS:
```
52500()#GPRS:LLSPERIOD=20,0;
```

- on command via server:
```
LLSPERIOD=20,0;
```

The device 52500 is set up to record data from fuel level sensor 1-4 every 20 seconds, record of data from fuel level sensors 5-8 is disabled.

485SPEED – RS-485 baudrate

Command	485SPEED
Description	RS-485 baudrate
Request	G485SPEED
Supported with firmware	9.50 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up a baudrate of RS-485 bus.

COMMAND FORMAT

password 485SPEED=baudrate;

parameters:
• **baudrate** – RS-485 baudrate in bit/s. Available values are 4800, 9600, 19200, 38400, 57600, 115200.

SAMPLE COMMAND

• via SMS
```
1234zxcv 485SPEED=9600;
```

• via server
```
485SPEED=9600;
```

SAMPLE REPLY

• on SMS:
```
52500()#485SPEED=9600;
```

• on command via server:
```
485SPEED=9600;
```

RS-485 bus of the device 52500 is set up to baudrate 9600 bit/s.

LLSWIDE – extended record of fuel level data

Command	LLSWIDE
Description	Extended record of fuel level data
Request	GLLSWIDE
Supported with firmware	9.80 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable extended record of data from fuel level sensors. Extended record enables recording of temperature readings and extends fuel level data width till 16 bits.

COMMAND FORMAT

password LLSWIDE=status;

parameters:
• **status** – extended record of fuel level data:
  1 – enabled;
  0 – disabled.

SAMPLE COMMAND
• via SMS
```
1234zxcv LLSWIDE=1;
```

• via server
```
LLSWIDE=1;
```

SAMPLE REPLY
• on SMS:
```
52500()#LLSWIDE=1;
```

• on command via server:
```
LLSWIDE=1;
```

Extended record of fuel level data is enabled in the device 52500.

AGHIP – AutoGRAPH hardware interface protocol

Command	AGHIP
Description	AutoGRAPH hardware interface protocol
Request	GAGHIP
Supported with firmware	11.49 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable AGHIP protocol to read data from TKLS fuel level sensor produced by TechnoKom in AGHIP protocol. Also AGHIP protocol provides readings of wide range of additional data: sensor X and Y-axes inclinations, acceleration measured by sensor internal accelerometer and etc.

COMMAND FORMAT

password AGHIP=status;

parameters:
• **status** – enable AGHIP protocol:
   1 – enabled;
   0 – disabled.

SAMPLE COMMAND
• via SMS
```
1234zxcv AGHIP=1;
```

• via server
```
AGHIP=1;
```

SAMPLE REPLY
• on SMS:
```
52500()#AGHIP=1;
```

• on command via server:
```
AGHIP=1;
```

AGHIP protocol is enabled in the device 52500.

PPADDR — RS-485 addresses of passenger counting and weight sensors

Command	PPADDR
Description	RS-485 addresses of passenger counting sensors and weight sensors
Request	GPPADDR
Supported with firmware	9.5 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up network addresses of passenger counting sensors and weight sensors which are connected to the AutoGRAPH device via RS-485. AutoGRAPH devices supports simultaneous connection of up to 16 weight sensors and passenger counting sensors.

COMMAND FORMAT

password PPADDR=addr1,addr2,addr3,addr4,addr5,addr6,addr7,addr8,addr9,addr10,addr11, addr12,addr13,addr14,addr15,addr16;

parameters:
- **addr1…addr16** – addresses of passenger counting sensors and weight sensors. Addresses must be listed comma separated and ranges from 1 to 255.

SAMPLE COMMAND
- via SMS
```
1234zxcv PPADDR=3,4,5,6,7,0,0,0,0,0,0,0,0,0,0,0;
```

- via server
```
PPADDR=3,4,5,6,7,0,0,0,0,0,0,0,0,0,0,0;
```

SAMPLE REPLY
- on SMS:
```
52500()#PPADDR=3,4,5,6,7,0,0,0,0,0,0,0,0,0,0,0;
```

- on command via server:
```
PPADDR=3,4,5,6,7,0,0,0,0,0,0,0,0,0,0,0;
```

The device 52500 is set up to operate with 5 sensors with addresses 3, 4, 5, 6, 7 via RS-485.

PPPERIOD – data recording period of passenger counting and weight sensors

Command	PPPERIOD
Description	Data recording period of passenger counting and weight sensors
Request	GPPERIOD
Supported with firmware	9.5 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up period of data recording from passenger counting and weight sensors connected to AutoGRAPH device via RS-485.

COMMAND FORMAT

password PPPERIOD=period;

parameters:
- **period** – period of data recording from passenger counting and weight sensors. The period must be specified in seconds and varies from 30 to 3600 seconds, 0 disables recording.

SAMPLE COMMAND
- via SMS
```
1234zxcv PPPERIOD=30;
```

- via server
```
PPPERIOD=30;
```

SAMPLE REPLY
- on SMS:
```
52500()#PPPERIOD=30;
```

- on command via server:
```
PPPERIOD=30;
```

The device 52500 is set up to record data from passenger counting and weight sensors every 30 seconds.

RASHPERIOD – input expander recording period

Command	RASHPERIOD
Description	Input expander recording period
Request	GRASHPERIOD
Supported with firmware	7.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up period of data recording from input expander connected to AutoGRAPH device via RS-485.

COMMAND FORMAT

password RASHPERIOD=period;

parameters:
- **period** – period of data recording from input expander. The period must be specified in seconds and varies from 1 to 3600 seconds, 0 disables recording.

SAMPLE COMMAND
- via SMS
```
1234zxcv RASHPERIOD=60;
```

- via server
```
RASHPERIOD=60;
```

SAMPLE REPLY
- on SMS:
```
52500()#RASHPERIOD=60;
```

- on command via server:
```
RASHPERIOD=60;
```

The device 52500 is set up to record data from input expander every 60 seconds.

RASHFLAGS – input expander settings

Command	RASHFLAGS
Description	Input expander settings
Request	GRASHFLAGS
Supported with firmware	7.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up input expander connected to AutoGRAPH device via RS-485.

COMMAND FORMAT

password RASHFLAGS=p1,p2,p3,p4,p5,p6,p7,p8;

parameters:
- **p1** – make an additional record of input expander data if any input of the expander changes its state:
  1 – enabled;
  0 – disabled.
- **p2** – reserved;
- **p3** – reserved;
- **p4** – reserved;
- **p5** – reserved;
- **p6** – reserved;
- **p7** – reserved;
- **p8** – reserved;

SAMPLE COMMAND
- via SMS
```
1234zxcv RASHFLAGS=1,0,0,0,0,0,0,0;
```

- via server
```
RASHFLAGS=1,0,0,0,0,0,0,0;
```

SAMPLE REPLY
- on SMS:
```
52500()#RASHFLAGS=1,0,0,0,0,0,0,0;
```

- on command via server:
```
RASHFLAGS=1,0,0,0,0,0,0,0;
```

The device 52500 is set up to make extra record of data from input expander if one of the expander inputs changes its state.

S485 – data transmission via RS-485

Command	S485
Description	Data transmission via RS-485
Supported with firmware	7.2 and higher
Setting	Available via data server and SMS
Comment	The command is intended to send data to external device via RS-485 bus.

COMMAND FORMAT

password S485=Long:AnswerLong:AnswerWait:BaudRate:Date;

parameters:
- **Long** – data package length;
- **AnswerLong** – expected length of reply on data which are sent to external device;
- **AnswerWait** – expected time of answer reception in milliseconds;
- **BaudRate** – data transmission baudrate via RS-485;
- **Date** – data which will be sent to external device. Data must be specified in HEX format.

REPLY FORMAT

S485=AnswerLong:Data;

parameters:
- **AnswerLong** – length of received package;
- **Date** – data which has been received in HEX format.

SAMPLE COMMAND
- via SMS

```
1234zxcv S485=5:15:300:19200:3233340D0A;
```

- via server

```
S485=5:15:300:19200:3233340D0A;
```

SAMPLE REPLY
- on SMS:

```
52500()#S485=15:3233340D0A;
```

- on command via server:

```
S485=15:3233340D0A;
```

DISPLAY – data transmission to AutoGRAPH-INFO device

Command	DISPLAY
Description	Data transmission to AutoGRAPH-INFO
Supported with firmware	9.67 and higher
Setting	Available via data server and SMS
Comment	The command is intended to send data to AutoGRAPH-INFO device connected to AutoGRAPH controller vis RS-485.

COMMAND FORMAT

password DISPLAY=text;

parameters:
• **text** – text message which will be sent to AutoGRAPH-INFO. The message can contain letters of Russian and Latin alphabet as well as any characters besides the line feed and semicolon characters. If the control command is sent via data server, text in Russian must be CP1251-encoded.

REPLY FORMAT

DISPLAY=DisplayAnswer;

parameters:
• **DisplayAnswer** – AutoGRAPH-INFO reply on received text message:
• If the message has been successfully received, the AutoGRAPH-INFO sends the same text in the reply;
• If the message hasn't been delivered or it is unavailable to send the acknowledgment, the message *"DISPLAY TIMEOUT"* is sent to AutoGRAPH controller. It means that the AutoGRAPH-INFO is turned off, damaged or no AutoGRAPH-INFO device is connected to the controller.

SAMPLE COMMAND
• via SMS
```
1234zxcv DISPLAY=Hello world!;
```

• via server
```
DISPLAY=Hello world!;
```

SAMPLE REPLY
• on SMS:
```
52500()#DISPLAY=Hello world!;
```

• on command via server:
```
DISPLAY=Hello world!;
```

The device 52500 has sent message «Hello world!» to AutoGRAPH-INFO via RS-485.

PPIRMA – enable connection of IRMA APC system via RS-485

Command	PPIRMA
Description	Enable connection of IRMA APC system via RS-485
Request	GPPIRMA
Supported with firmware	10.40 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable the AutoGRAPH device operation with IRMA automatic passenger counting system via RS-485.

COMMAND FORMAT

password PPIRMA=status;

parameters:
- **status** – enable connection of IRMA APC system:
  1 – enabled;
  0 – disabled.

SAMPLE COMMAND
- via SMS
```
1234zxcv PPIRMA=1;
```

- via server
```
PPIRMA=1;
```

SAMPLE REPLY
- on SMS:
```
52500()#PPIRMA=1;
```

- on command via server:
```
PPIRMA=1;
```

The device 52500 is set up to operate with IRMA APC system via RS-485.

APCOUT485 – sending data from APC system to external device

Command	APCOUT485
Description	Sending data from APC system to external device via RS-485-2
Request	GAPCOUT485
Supported with firmware	AGXL-11.61 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable transmission of data received from automatic passenger counting system to external device via RS-485-2.

COMMAND FORMAT

password APCOUT485=status;

parameters:
• **status** – transmit APC data via RS-485-2:
  1 – enabled;
  0 – disabled.

SAMPLE COMMAND
• via SMS
```
1234zxcv APCOUT485=1;
```

• via server
```
APCOUT485=1;
```

SAMPLE REPLY
• on SMS:
```
52500()#APCOUT485=1;
```

• on command via server:
```
APCOUT485=1;
```

The device 52500 is set up to send data received from APC system to external device via RS-485-2.

TRKADDR – net addresses of TechnoKom angle sensors "TRKADDR"

Command	TRKADDR
Description	Net addresses of TechnoKom angle sensors "TKAM"
Request	GTRKADDR
Supported with firmware	AGEX-12.14 and higher
Setting	Available via data server and SMS
Comment	The command is intended to specify net addresses of TechnoKom fuel dispenser controller "AGFC" which can be connected to RS-485 bus of AutoGRAPH controller.

COMMAND FORMAT

password TRKADDR=addr1,addr2,addr3,addr4,addr5...addr16;

parameters :
• **addr1...addr16** – addresses of AGFC fuel dispenser controllers. Up to 8 AGFC controller can be connected to the AutoGRAPH controller. Range of possible addresses – D0-D7. The addresses can be specified in random order, but it should be noted that readings of the AGFC controller which address is specified in the field "addr1" of the command will be recorded as the readings of the AGFC controller 1, similarly the readings will be displayed in AutoGRAPH 5 dispatch software.

SAMPLE COMMAND

• via SMS
```
1234zxcv TRKADDR=D0,D1,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF;
```

• via server
```
1234zxcv TRKADDR=D0,D1,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF;
```

SAMPLE REPLY

• on SMS:
```
52500()#1234zxcv TRKADDR=D0,D1,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,
FF,FF,FF;
```

• on command via server:
```
1234zxcv TRKADDR=D0,D1,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF;
```

The device 52500 is set up to operate with two AGFC controller with addresses D0, D1.

TKAM − settings of TechnoKom angle sensors "TKAM"

Command	TKAM
Description	Settings of TechnoKom angle sensors "TKAM"
Request	GTKAM
Supported with firmware	AGEX-12.19 and higher
Setting	Available via data server and SMS
Comment	The command is intended to specify net addresses and record period of TechnoKom angle sensors "TKAM" which can be connected to RS-485 bus of AutoGRAPH controller.

COMMAND FORMAT

password TKAM=period:addr1,addr2,addr3,addr4,addr5...addr16;

parameters :
- **period** – record period of TKAM sensors, in sec. Range of possible values – 5...3600 sec, 0 – disables data recording from angle sensors.
- **addr1...addr16** – addresses of TKAM sensors connected to AutoGRAPH controller. Up to 8 TKAM sensors can be connected to the controller. Range of possible addresses – C0-C7. The addresses can be specified in random order, but it should be noted that readings of a sensor which address is specified in the field "addr1" of the command will be recorded as the readings of the TKAM sensor 1, similarly the readings will be displayed in AutoGRAPH 5 dispatch software.

SAMPLE COMMAND
- via SMS
```
1234zxcv TKAM=60:C0,C1,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF;
```

- via server
```
TKAM=60:C0,C1,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF;
```

SAMPLE REPLY
- on SMS:
```
52500()#TKAM=60:C0,C1,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF;
```

- on command via server:
```
TKAM=60:C0,C1,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF;
```

The device 52500 is set up to operate with two TKAM angle sensors with addresses C0, C1. Record period of TKAM sensors– 60 seconds.

TKKZ − settings of TechnoKom loading control system

Command	TKKZ
Description	Settings of TechnoKom loading control system
Request	GTKKZ
Supported with firmware	AGEX-12.34 and higher
Setting	Available via data server and SMS
Comment	The command is intended to specify net addresses and record period of TechnoKom loading control systems connected to AutoGRAPH controller via RS-485 bus.

COMMAND FORMAT

password TKKZ=period:addr1,addr2,addr3,addr4,addr5...addr16;

parameters:
- **period** – record period of TechnoKom loading control systems, in sec. Range of possible values – 5...3600 sec, 0 – disables data recording from the systems.
- **addr1...addr16** – addresses of TechnoKom loading control systems connected to AutoGRAPH controller. Up to 8 such systems can be connected to the controller. Range of possible addresses – B0-B7. The addresses can be specified in random order, but it should be noted that readings of a system which address is specified in the field "addr1" of the command will be recorded as the readings of the system 1, similarly the readings will be displayed in AutoGRAPH 5 dispatch software.

SAMPLE COMMAND

• via SMS
```
1234zxcv TKKZ=120:B0,B1,FF,FF,
FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,
FF,FF;
```

• via server
```
TKKZ=120:B0,B1,FF,FF,FF,FF,FF,
FF,FF,FF,FF,FF,FF,FF,FF,FF;
```

SAMPLE REPLY

• on SMS:
```
52500()#TKKZ=120:B0,B1,FF,FF,FF,
FF,FF,FF,FF,FF,FF,FF,FF,FF,FF,
FF;
```

• on command via server:
```
TKKZ=120:B0,B1,FF,FF,FF,FF,FF,
FF,FF,FF,FF,FF,FF,FF,FF,FF;
```

The device 52500 is set up to operate with two TechnoKom loading control systems with addresses B0, B1. Record period – 120 seconds.

MODBUSTEMP1 – MODBUS
temperature sensors settings

Command	MODBUSTEMP1
Description	MODBUS temperature sensors settings
Request	GMODBUSTEMP1
Supported with firmware	10.44 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up parameters of temperature sensors connected to AutoGRAPH device via RS485 bus (MODBUS).

COMMAND FORMAT

password MODBUSTEMP1=temp5:temp6:temp7:temp8;

parameters:
- **temp5 (6...8)** – settings of temperature sensors connected to the device via RS485-MODBUS. Temperature readings from MODBUS sensors are recorded in the device memory as readings of 1-Wire temperature sensors 5...8, e.g. readings of the MODBUS temperature sensor 5 are recorded as readings of the 1-Wire temperature sensor 5 and etc.

  The field *temp5* as well as *temp6-temp8* has the following format:
  - **Address** – MODBUS address of temperature controller in hexadecimal form. Controller address is given in technical documentation on that controller.
  - **Register** – identifier of controller register holding the temperature value.
  - **Coefficient** – coefficient used for conversion of register value to temperature in degrees. The conversion coefficient is required be specified in C°/bit.

  The sensor settings must be specified comma separated in the following order: address,register,coefficient. The address FF or 00 disables the sensor.

SAMPLE COMMAND
- via SMS
```
1234zxcv MODBUSTEMP1=F7,0201,0.1:F7,0202,0.1,:F6,0201,0.1:FF,0,0;
```

- via server
```
MODBUSTEMP1=F7,0201,0.1:F7,0202,0.1,:F6,0201,0.1:FF,0,0;
```

SAMPLE REPLY

• on SMS:

```
52500()#MODBUSTEMP1=F7,0201,0.1:F7,0202,0.1,:F6,0201,0.1:FF,0,0;
```

• on command via server:

```
MODBUSTEMP1=F7,0201,0.1:F7,0202,0.1,:F6,0201,0.1:FF,0,0;
```

Following MODBUS temperature sensors are connected to the device 52500:

• **Temperature sensor 1 with address F7:** temperature value is read from the register 0201, the conversion coefficient is 0.1 C°/bit.
• **Temperature sensor 2 with address F7:** temperature value is read from the register 0202, the conversion coefficient is 0.1 C°/bit.
• **Temperature sensor 3 with address F6:** temperature value is read from the register 0201, the conversion coefficient is 0.1 C°/bit.
• **Temperature sensor 4** is disabled.

MODBUSID – MODBUS address of AutoGRAPH-CardReader device

Command	MODBUSID
Description	MODBUS address of AutoGRAPH-CardReader device
Request	GMODBUSID
Supported with firmware	AGTK-10.60, AGXL-11.32 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up MODBUS address of the AutoGRAPH-CardReader device produced by Technokom and connected to the AutoGRAPH controller via RS485-MODBUS.

COMMAND FORMAT

password MODBUSID=address;

parameters:
- **address** – MODBUS address of AutoGRAPH-CardReader device. The address is required to be in hexadecimal form and in the range of 1 to FE. The address 0 (or FF) disables operation of the controller with AutoGRAPH-CardReader device.

SAMPLE COMMAND
- via SMS
```
1234zxcv MODBUSID=FE;
```

- via server
```
MODBUSID=FE;
```

SAMPLE REPLY
- on SMS:
```
52500()#MODBUSID=FE;
```

- on command via server:
```
MODBUSID=FE;
```

The address of AutoGRAPH-CardReader device connected to the device 52500 via RS485-MODBUS is FE.

MODBUSFORMAT − MODBUS data format

Command	MODBUSFORMAT
Description	MODBUS data format
Request	GMODBUSFORMAT
Supported with firmware	AGXL-11.44 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up format of data transferred via RS485-MODBUS. The MODBUS data format specified in the AutoGRAPH controller must match with the MODBUS format of an external device connected to the AutoGRAPH controller via RS485-MODBUS.

COMMAND FORMAT

password MODBUSFORMAT=format;

parameters:
- **format** – MODBUS data format:
  0 – 8-N-1: 8 data bits, no parity bit, and one stop bit;
  1 – 8-N-2: 8 data bits, no parity bit, and two stop bits;
  2 – 8-O-1: 8 data bits, odd parity, and one stop bit;
  3 – 8-E-1: 8 data bits, even parity, and one stop bit;

SAMPLE COMMAND
- via SMS
`1234zxcv MODBUSFORMAT=3;`

- via server
`MODBUSFORMAT=3;`

SAMPLE REPLY
- on SMS:
`52500()#MODBUSFORMAT=3;`

- on command via server:
`MODBUSFORMAT=3;`

The device 52500 is set up to transfer data in the 8-E-1 format via RS485-MODBUS.

MODBUSLSA – MODBUS level sensors settings

Command	MODBUSLSA
Description	MODBUS level sensors settings
Request	GMODBUSLSA
Supported with firmware	AGXL-11.44 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up operation of level sensors connected to AutoGRAPH device via RS485-MODBUS.

COMMAND FORMAT

password MODBUSLSA=addr1,reg1:addr2,reg2:addr3,reg3:addr4,reg4:addr5,reg5:addr6,reg6: addr7,reg7:addr8,reg8;

parameters:
- **addr** – level sensor MODBUS address in hexadecimal form. AutoGRAPH device supports connection of up to 8 MODBUS level sensors simultaneously;
- **reg** – register holding readings from the level sensor: the register reg1 holds readings of the sensor with address addr1 and etc.

SAMPLE COMMAND
- via SMS
```
1234zxcv MODBUSLSA=FE,0506:FE,0508:FF,FFFF:FF,FFFF:FF,FFFF:FF,
FFFF,FFFF:FF,FFFF;
```

- via server
```
MODBUSLSA=FE,0506:FE,0508:FF,FFFF:FF,FFFF:FF,FFFF:FF,FFFF:FF,
FFFF:FF,FFFF;
```

SAMPLE REPLY
- on SMS:
```
52500()#MODBUSLSA=FE,0506:FE,0508:FF,FFFF:FF,FFFF:FF,FFFF:FF,
FFFF:FF,FFFF:FF,FFFF;
```

- on command via server:
```
MODBUSLSA=FE,0506:FE,0508:FF,FFFF:FF,FFFF:FF,FFFF:FF,FFFF:FF,
FFFF:FF,FFFF;
```

The device 52500 is set up to operate with two level sensors via RS485-MODBUS: sensor 1 has address FE, readings are read from the register 0506; sensor 2 has address FE, readings are read from the register 0508.

MODBUSLSPERIOD − MODBUS level data recording period

Command	MODBUSLSAPERIOD
Description	MODBUS level data recording period
Request	GMODBUSLSAPERIOD
Supported with firmware	AGXL-11.44 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up period of data recording received from MODBUS level sensors.

COMMAND FORMAT

password MODBUSLSAPERIOD=period;

parameters:
- **period** – level data recording period. The period must be specified in seconds. Maximum value is 43200 seconds (12 hours).

SAMPLE COMMAND
- via SMS

```
1234zxcv MODBUSLSAPERIOD=120;
```

- via server

```
MODBUSLSAPERIOD=120;
```

SAMPLE REPLY
- on SMS:

```
52500()#MODBUSLSAPERIOD=120;
```

- on command via server:

```
MODBUSLSAPERIOD=120;
```

The device 52500 is set up to record level data received from MODBUS every 120 seconds.

MODBUSSENCONF (MODBUSEXT) – configurable MODBUS data

Command	MODBUSSENCONF
Description	Configurable MODBUS data
Request	GMODBUSSENCONF
Supported with firmware	AGXL-11.44 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up additional sensors that can be connected to the AutoGRAPH device via MODBUS.

COMMAND FORMAT

password MODBUSSENCONF=addr1,reg1,byte1,sens1:addr2,reg2,byte2,sens2:
addr3,reg3,byte3,sens3:addr4,reg4,byte4,sens4:addr5,reg5,byte5,sens5:addr6,reg6,byte6,sens6:
addr7,reg7,byte7,sens7:addr8,reg8,byte8,sens8:addr9,reg9,byte9,sens9:
addr10,reg10,byte10,sens10:addr11,reg11,byte11,sens11:addr12,reg12,byte12,sens12:
addr13,reg13,byte13,sens13:addr14,reg14,byte14,sens14:addr15,reg15,byte15,sens15:
addr16,reg16,byte16,sens16;

parameters:
- **addr** – controller MODBUS hexadecimal address which the sensor is connected to. The address FF disables the sensor;
- **reg** – hexadecimal address of the register holding readings from the sensor: the register reg1 holds readings of the sensor connected to the controller with address addr1 and etc.;
- **byte** – data bytes which are read by AutoGRAPH device from MODBUS: 2 or 4 bytes. A MODBUS register is 2 bytes wide, so the device can read 1 or 2 registers at a time;
- **sens** – adaptive level that specifies sensor readings deviation threshold exceeding that initiates extra record of the sensor readings.

SAMPLE COMMAND

- via SMS

```
1234zxcv MODBUSSENCONF=F8,0203,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:
FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF
,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,
1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024;
```

- via server

```
MODBUSSENCONF=F8,0203,2,1024:F8,0204,2,512:FF,FFFF,2,1024:FF,FFFF,
2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024: FF,FFFF,2,1024:
FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,
FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024;
```

SAMPLE REPLY

• on SMS:
```
52500()#MODBUSSENCONF=F8,0203,2,1024:F8,0204,2,512:FF,FFFF,2,1024:
:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:
FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:
FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:
FF,FFFF,2,1024;
```

• on command via server:
```
MODBUSSENCONF=F8,0203,2,1024:F8,0204,2,512:FF,FFFF,2,1024:
:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:
FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:
FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:FF,FFFF,2,1024:
FF,FFFF,2,1024;
```

The device 52500 is set up to operate with one additional sensor via RS485-MODBUS: the sensor is connected to the controller with MODBUS address F8, readings are read from the register 0203, simultaneously two bytes of data are read. Extra recording is disabled.

....

NOTE

Starting from the firmware AGEX-12.36 AutoGRAPH controllers support connection of up to 100 MODBUS sensors. MODBUSSENCONF command is intended to set up 16 sensors. To configure MODBUS sensors from 17 to 100, the command MODBUSEXT is used. Parameters of this command are generated in HEX format that's why it is recommended to use the «AG.GSMConf» program to prepare the command («RS-485 MODBUS – additional sensors» tab).

....

MODBUSSENPERIOD – MODBUS additional data recording period

Command	MODBUSSENPERIOD
Description	MODBUS additional data recording period
Request	GMODBUSSENPERIOD
Supported with firmware	AGXL-11.44 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up period of recording an additional data received from MODBUS.

COMMAND FORMAT

password MODBUSSENPERIOD=period;

parameters:
• **period** – MODBUS data recording period. The period must be specified in seconds.

SAMPLE COMMAND

• via SMS
```
1234zxcv MODBUSSENPERIOD=200;
```

• via server
```
MODBUSSENPERIOD=200;
```

SAMPLE REPLY

• on SMS:
```
52500()#MODBUSSENPERIOD=200;
```

• on command via server:
```
MODBUSSENPERIOD=200;
```

The device 52500 is set up to record additional data received from MODBUS every 200 seconds.

CAMERASET – camera address (RS-485-2)

Command	CAMERASET
Description	Camera address (RS-485-2)
Supported with firmware	AGXL-11.49 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up address of a photo camera connected to RS-485-2 bus of the AutoGRAPH device. The command requires that only one camera is connected to the AutoGRAPH device while the configuration. If more than one camera is connected to the device, none of them will be configured.

COMMAND FORMAT

password CAMERASET=address;

parameters:
• **address** – address of camera connected to RS-485-2 bus of the AutoGRAPH device.

SAMPLE COMMAND
• via SMS
`1234zxcv CAMERASET=1;`

• via server
`CAMERASET=1;`

SAMPLE REPLY
• on SMS:
`52500()#CAMERASET=1;`

• on command via server:
`CAMERASET=1;`

The address 1 is designated to photo camera connected to the device 52500.

CAMERACONFIG – camera settings

Command	CAMERACONFIG
Description	Camera settings
Request	GCAMERACONFIG
Supported with firmware	AGXL-11.49 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up photo cameras connected to RS-485-2 bus of the AutoGRAPH device.

COMMAND FORMAT

password CAMERACONFIG=period1,srv1,flags1,event_period1:period2,srv2,flags2, event_period2:…period16,srv16,flags16,event_period16;

parameters (parameters of only used cameras are to be specified in the command):
- **period1 (2...16)** – a photo recording period of camera 1 (2...16) in seconds;
- **srv1 (2...16)** – photo transmission to server:
  0 – transmit on request only;
  1 – transmit immediately after photo recording.
- **flag1 (2...16)** – make a photo by events. This field must be specified in hexadecimal form. For convenience, it is recommended to set up event flags in the GSMConf application.
- **event_period1 (2...16)** – a period of photo recording from camera 1 (2..16) when a preset event triggers. The period must be specified in sec.

SAMPLE COMMAND
- via SMS
```
1234zxcv CAMERACONFIG=120,1,0000A001,100:300,0,00000000,300;
```

- via server
```
CAMERACONFIG=120,1,0000A001,100:300,0,00000000,300;
```

SAMPLE REPLY
- on SMS:
```
52500()#CAMERACONFIG=120,1,0000A001,100:300,0,00000000,300;
```

- on command via server:
```
CAMERACONFIG=120,1,0000A001,100:300,0,00000000,300;
```

The device 52500 is set up to operate with 2 photo cameras. The cameras are set as follows:
- Camera 1 records photos every 120 seconds, extra record is made by digital input 1 triggering, at vehicle stops, and by accelerometer triggering. While the events are in the triggered state, photos are recorded every 100 seconds. Photo is transferred to server immediately after the recording.
- Camera 2 records photos every 300 seconds, extra recording is disabled. Photo is transferred to server on request.

RS-232 BUS SETTINGS

RS232MOD – RS-232 mode

Command	RS232MOD
Description	RS-232 mode
Request	GRS232MOD
Supported with firmware	AGXL-11.31 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up mode of RS-232 bus.

COMMAND FORMAT

password RS232MOD=mode;

parameters:
- **mode** – RS-232 mode:

  0 – set up the device to operate with AutoGRAPH-NAVIGATOR device produced by TechnoKom. This mode is enabled by default;

  1 – set up the device to operate with CAN-LOG device produced by TechnoKom;

  2 – set up the device to operate with the external GLONASS/GPS receiver transferring data in NMEA 0183 protocol.

  3 – set up the device to transfer APC data to an external device via RS-232 bus.

  4 – set up the device to operate with the VDO tachograph via RS-232 bus.

  5 – set up the device to operate with the IGLA measuring systems via RS-232.

  6 – set up the device to operate with a magnetic card reader via RS-232.

  7 – set up the device to operate with the Q-Puck satellite modem intended to transfer data via Iridium network.

  8 – set up the device to operate with the IVE-50 weight measurement systems.

SAMPLE COMMAND
- via SMS
```
1234zxcv RS232MOD=0;
```

- via server
```
RS232MOD=0;
```

SAMPLE REPLY
- on SMS:
```
52500()#RS232MOD=0;
```

- on command via server:
```
RS232MOD=0;
```

The device 52500 is set up to operate with AutoGRAPH-NAVIGATOR device via RS-232.

RS232SPEED − RS-232 mode baudrate

Command	RS232SPEED
Description	RS-232 baudrate
Request	GRS232SPEED
Supported with firmware	AGXL-11.31 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up RS-232 bus baudrate.

COMMAND FORMAT

password RS232SPEED=baudrate;

parameters:
- **baudrate** – RS-232 baudrate in bit/s. Available values are 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.

SAMPLE COMMAND
- via SMS
```
1234zxcv RS232SPEED=115200;
```

- via server
```
RS232SPEED=115200;
```

SAMPLE REPLY
- on SMS:
```
52500()#RS232SPEED=115200;
```

- on command via server:
```
RS232SPEED=115200;
```

RS-232 bus baudrate of the device 52500 is set to 115200 bit/s.

IGLACONF – settings of the IGLA Measurement Systems (SI IGLA)

Command	IGLACONF
Description	Settings of the IGLA Measurement Systems
Request	GIGLACONF
Supported with firmware	AGEX-12.17 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up connection parameters of the IGLA Measurement Systems

COMMAND FORMAT

password IGLACONF=period:addr1,data1:addr2,data2:addr3,data3:…addr16,data16;

parameters:

- **period** – a period of data recording from the IGLA systems. A range of possible values – 5...3600 sec, 0 – disables data recording;
- **addr1 (2...16)**– a measuring channel address, in HEX format.
- **data1 (2...16)** – data to be read from the channel which address is specified in the addr1 (2...16) field. Data must be specified in HEX format. To calculate HEX value, create a 16-bit binary sequence by setting 1 to enable data recording, and 0 do disable data recording for following readings of the IGLA measuring systems in the order as they are given. Then convert the sequence to HEX format.

  1 – H, mm – petroleum products level.

  2 – M, kg – petroleum products weight.

  3 – V, l – petroleum products volume.

  4 – P_{aver}, g/cm^3 – average product density.

  5 – T_{aver}, C° – average product temperature.

  6 – H_w, mm – bottom water level.

  7-12 – Reserved – data types 13-12 are reserved.

  13 – $P_{reduced}$, g/cm^3 – reduced product density.

  14-16 – Reserved – data types 14-16 are reserved.

The sequence is generated starting from the 16th reading (from the end).

Data types															
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1

The sequence 0001000000111111 given as an example in the table set up the AutoGRAPH controller to record all available data from IGLA systems – readings 1-6, 13. The sequence converted to HEX is 103F which must be specified in the "data" field of the IGLACONF command

The IGLACONF command with required settings can be automatically generated in the «AG.GSMConf» program (on the «RS232 IGLA» tab).

SAMPLE COMMAND

• via SMS

```
1234zxcv  IGLACONF=120,0:01,103F:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:
FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0;
```

• via server:

```
IGLACONF=120,0:01,103F:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0
:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0;
```

SAMPLE REPLY

• on SMS:

```
52500()#IGLACONF=120,0:01,103F:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:
FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0;
```

• on command via server:

```
IGLACONF=120,0:01,103F:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0
:FF,0:FF,0:FF,0:FF,0:FF,0:FF,0;
```

The device 52500 is set up to record data from one channel of the IGLA systems. The channel address is F0. Following data is recorded: 1-5, 13 (103F (HEX) –> 0001000000111111 (BIN)). Data recording period – 120 seconds.

IVE50CONF − settings of the IVE-50 weight measuring system

Command	IVE50CONF
Description	Settings of the IVE-50 measuring system
Request	GIVE50CONF
Supported with firmware	AGEX-12.34 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up the AutoGRAPH controller for connection to IVE-50 weight measuring system.

COMMAND FORMAT

password IVE50CONF=period,address;

parameters:
- **period** – a period of data recoding from the IVE-50 system, in seconds.
- **address** – an address of the IVE-50 system on RS-232 bus, in HEX format.

SAMPLE COMMAND

- via SMS
```
1234zxcv IVE50CONF=10,F0;
```

- via server:
```
IVE50CONF=10,F0;
```

SAMPLE REPLY

- on SMS:
```
52500()#IVE50CONF=10,F0;
```

- on command via server:
```
IVE50CONF=10,F0;
```

The device 52500 is set up to record data from the IVE-50 measuring system every 10 seconds. The IVE-50 system address is F0.

IRIDIUMCONF – settings of IridiumSBD satellite modem

Command	IRIDIUMCONF
Description	Settings of the IridiumSBD satellite modem
Request	GIRIDIUMCONF
Supported with firmware	AGEX-12.34 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up the AutoGRAPH controller for connection to IridiumSBD satellite modem

COMMAND FORMAT

password IRIDIUMCONF=parameters;

parameters:
- **parameters** – parameters of IridiumSBD satellite modem in HEX format. The command with required settings must be generated in the «AG.GSMConf» program on the «RS232 Iridium» tab. The Iridium settings on this tab are displayed only if the «Iridium» mode is selected on the «RS232» tab

SAMPLE COMMAND

- via SMS
```
1234zxcv IRIDIUMCONF=fc30e,ffffffc3,306,efd,68,ed3,2000004010,
c000c,8c,30,c4,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

- via server:
```
IRIDIUMCONF=fc30e,ffffffc3,306,efd,68,ed3,2000004010,c000c,8c,
30,c4,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

SAMPLE REPLY

- on SMS:
```
52500()#IRIDIUMCONF=fc30e,ffffffc3,306,efd,68,ed3,2000004010,
c000c,8c,30,c4,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

- on command via server:
```
IRIDIUMCONF=fc30e,ffffffc3,306,efd,68,ed3,2000004010,c000c,8c,
30,c4,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```

NOTE   *Also the «AG.GSMConf» program support interpretation of parameters of the IRIDIUMCONF command, e.g. previously requested from the device.*

CAN BUS SETTINGS

CANCOMMON − CAN data identifiers

Command	CANCOMMON
Description	CAN data identifiers
Request	GCANCOMMON
Supported with firmware	5.3 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up identifiers of CAN data: vehicle speed, fuel consumption, accelerator pedal position, service distance, engine temperature, total engine hours, travelled distance, engine speed.

COMMAND FORMAT

password CANCOMMON=param1,param2,param3,param4,param5,param6,param7,param8;

parameters:

- **param1...param8** – CAN data identifiers in hexadecimal format. CAN identifiers of required data (up to 8 records) are to be listed comma separated. Empty fields must be filled by FFFFFFFF or 00000000.

SAMPLE COMMAND

- via SMS

```
1234zxcv CANCOMMON=FFFFFFFF,FFFFFFFF,18FEFC27,FFFFFFFF,FFFFFFFF,
FFFFFFFF,FFFFFFFF,FFFFFFFF;
```

- via server

```
CANCOMMON=FFFFFFFF,FFFFFFFF,18FEFC27,FFFFFFFF,FFFFFFFF,
FFFFFFFF,FFFFFFFF,FFFFFFFF;
```

SAMPLE REPLY

- on SMS:

```
52500()#CANCOMMON=FFFFFFFF,FFFFFFFF,18FEFC27,FFFFFFFF,FFFFFFFF,
FFFFFFFF,FFFFFFFF,FFFFFFFF;
```

- on command via server:

```
CANCOMMON=FFFFFFFF,FFFFFFFF,18FEFC27,FFFFFFFF,FFFFFFFF,FFFFFFFF,
FFFFFFFF,FFFFFFFF;
```

The device 52500 is set up to receive data with the identifier THE18FEFC27 from vehicle CAN bus.

CANFUEL – fuel level data identifiers

Command	CANFUEL
Description	Fuel level data identifiers
Request	GCANFUEL
Supported with firmware	5.3 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up identifiers of fuel level data received from vehicle CAN bus.

COMMAND FORMAT

password CANFUEL=param1,param2,param3,param4,param5,param6;

parameters:
- **param1...param6** – fuel level data identifier in hexadecimal form. CAN identifiers of fuel level in the required tanks (up to 6 tanks) are to be listed comma separated. Empty fields must be filled by FFFFFFFF or 00000000.

SAMPLE COMMAND

- via SMS
```
123zxcv CANFUEL=FFFFFFFF,0CFEFCC9,FFFFFFFF,FFFFFFFF,FFFFFFFF,
FFFFFFFF;
```

- via server
```
CANFUEL=FFFFFFFF,0CFEFCC9,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF;
```

SAMPLE REPLY

- on SMS:
```
52500()#CANFUEL=FFFFFFFF,0CFEFCC9,FFFFFFFF,FFFFFFFF,FFFFFFFF,
FFFFFFFF;
```

- on command via server:
```
CANFUEL=FFFFFFFF,0CFEFCC9,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF;
```

The device 52500 is set up to receive data on fuel level in tank 2 from CAN bus. The data identifier is 0CFEFCC9.

CANNEW – additional CAN identifiers

Command	CANNEW
Description	CAN identifier of additional data.
Request	GCANNEW
Supported with firmware	9.70 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up additional CAN identifiers.

COMMAND FORMAT

password CANNEW=param1,param2,param3,param4,param5;

parameters:
- **param1...param5** – additional CAN identifier in hexadecimal form. CAN identifiers are to be listed comma separated. Empty fields must be filled by FFFFFFFF or 00000000.

SAMPLE COMMAND

• via SMS
```
1234zxcv CANNEW=0CC5ECC4,00000000,00000000,00000000,00000000;
```

• via server
```
CANNEW=0CC5ECC4,00000000,00000000,00000000,00000000;
```

SAMPLE REPLY

• on SMS:
```
52500()#CANNEW=0CC5ECC4,00000000,00000000,00000000,00000000;
```

• on command via server:
```
CANNEW=0CC5ECC4,00000000,00000000,00000000,00000000;
```

The device 52500 is set up to receive additional data from CAN bus with identifier 0CFEFCC9.

CANECONOMY − instant fuel flow identifier

Command	CANECONOMY
Description	Instant fuel flow identifier
Request	GCANECONOMY
Supported with firmware	9.65 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up CAN identifier of instant fuel flow data.

COMMAND FORMAT

password CANECONOMY=id;

parameters:
- **id** – CAN identifier of instant fuel flow. To disable instant fuel flow data reception from CAN bus, send the identifier FFFFFFFF.

SAMPLE COMMAND
- via SMS
```
1234zxcv CANECONOMY=18FEF201;
```

- via server
```
CANECONOMY=18FEF201;
```

SAMPLE REPLY
- on SMS:
```
52500()#CANECONOMY=18FEF201;
```

- on command via server:
```
CANECONOMY=18FEF201;
```

The device 52500 is set up to receive instant fuel flow data with identifier 18FEF201.

CANALL – record all available data from CAN bus

Command	CANALL
Description	Record all available data from CAN bus
Request	GCANALL
Supported with firmware	9.90 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable recording of all available data from vehicle CAN bus.

COMMAND FORMAT

password CANALL=status;

parameters:
- **status** – record all available data from CAN bus:
  0 – disabled;
  1 – enabled.

SAMPLE COMMAND
- via SMS
```
1234zxcv CANALL=0;
```

- via server
```
CANALL=0;
```

SAMPLE REPLY
- on SMS:
```
52500()#CANALL=0;
```

- on command via server:
```
CANALL=0;
```

All CAN data recording is disabled in the device 52500.

CANACTIVE – active mode of CAN bus

Command	CANACTIVE
Description	Active mode of CAN bus
Request	GCANACTIVE
Supported with firmware	9.70 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable active mode of the device CAN bus providing continuous scan of vehicle CAN bus. Also the device sends data to vehicle CAN bus in this mode, so it is highly recommended to disable this mode when it is unnecessary.

COMMAND FORMAT

password CANACTIVE=status;

parameters:
• **status** – active mode of CAN bus:
  0 – disabled;
  1 – enabled.

SAMPLE COMMAND

• via SMS
```
1234zxcv CANACTIVE=0;
```

• via server
```
CANACTIVE=0;
```

SAMPLE REPLY

• on SMS:
```
52500()#CANACTIVE=0;
```

• on command via server:
```
CANACTIVE=0;
```

Active mode of the device 52500 CAN bus is disabled.

CANPERIOD – CAN data recording period

Command	CANPERIOD
Description	CAN data recording period
Request	GCANPERIOD
Supported with firmware	5.3 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up CAN data recording period.

COMMAND FORMAT

password CANPERIOD=period;

parameters:
- **period** – recording period. The period ranges from 30 to 3600 seconds, 0 period disables CAN data recording.

SAMPLE COMMAND

- via SMS
```
1234zxcv CANPERIOD=60;
```

- via server
```
CANPERIOD=60;
```

SAMPLE REPLY

- on SMS:
```
52500()#CANPERIOD=60;
```

- on command via server:
```
CANPERIOD=60;
```

The device 52500 is set up to record CAN data every 60 seconds.

RPMFILTER − indicate engine speed data on digital input 3

Command	RPMFILTER
Description	Indicate engine speed data on digital input 3
Request	GRPMFILTER
Supported with firmware	5.6 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable digital input 3 triggering if the device receives engine speed data from vehicle CAN bus.

COMMAND FORMAT

password RPMFILTER=param;

parameters:
- **period** – indicate engine speed on digital input 3:
  3 – enabled;
  0 – disabled;

SAMPLE COMMAND
- via SMS
```
1234zxcv RPMFILTER=3;
```

- via server
```
RPMFILTER=3;
```

SAMPLE REPLY
- on SMS:
```
52500()#RPMFILTER=3;
```

- on command via server:
```
RPMFILTER=3;
```

The device 52500 is set up to indicate engine speed on digital input 3.
This feature is commonly used to detect engine operation by triggering the device input 3 in AutoGRAPH Dispatch software.

CANADD – miscellaneous CAN data

Command	CANADD
Description	Miscellaneous CAN data
Request	GCANADD
Supported with firmware	5.3 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up to 4 miscellaneous CAN identifiers and number of bytes to be shifted in order to capture the required data.

COMMAND FORMAT

password CANADD=param1,shift1,param2,shift2,param3,shift3,param4,shift4;

parameters:
- **param1...param4** – identifiers of miscellaneous records from CAN bus. The identifiers must be hexadecimal. CAN identifiers are to be listed comma separated. Empty fields must be filled by FFFFFFFF or 0.
- **shift1...shift4** – number of bytes required to be shifted to capture necessary CAN parameters.

SAMPLE COMMAND
- via SMS
```
1234zxcv CANADD=0CC5EFF5,1,FFFFFFFF,0,FFFFFFFF,0,FFFFFFFF,0;
```

- via server
```
CANADD=0CC5EFF5,1,FFFFFFFF,0,FFFFFFFF,0,FFFFFFFF,0;
```

SAMPLE REPLY
- on SMS:
```
52500()#CANADD=CANADD=0CC5EFF5,1,FFFFFFFF,0,FFFFFFFF,0,FFFFFFFF,0;
```

- on command via server:
```
CANADD=0CC5EFF5,1,FFFFFFFF,0,FFFFFFFF,0,FFFFFFFF,0;
```

The device 52500 is set up to record one additional data from CAN bus with identifier 0CC5EFF5 and one byte shift.

CANWEIGHT − axle weight from CAN bus

Command	CANWEIGHT
Description	Axle weight from CAN bus
Request	CANWEIGHT
Supported with firmware	5.3 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up an identifiers of vehicle axle weight records.

COMMAND FORMAT

password CANWEIGHT=param1,param2,param3,param4,param5,param6,param7,param8, param9,param10;

parameters:
- **param1...param10** – CAN identifiers of axle weight data. The identifiers must be hexadecimal. CAN identifiers are to be listed comma separated. Empty fields must be filled by FFFFFFFF or 0.

SAMPLE COMMAND

- via SMS
```
1234zxcv CANWEIGHT=20FFFC3C,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,
FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF;
```

- via server
```
CANWEIGHT=20FFFC3C,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,
FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF;
```

SAMPLE REPLY

- on SMS:
```
52500()#CANWEIGHT=20FFFC3C,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,
FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF;
```

- on command via server:
```
CANWEIGHT=20FFFC3C,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,
FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF;
```

The device 52500 is set up to receive one CAN record on vehicle axle weight. The record identifier is 20FFFC3C.

GCANDM2 – DM2 request

Command	GCANDM2
Description	DM2 request
Supported with firmware	9.70 and higher
Setting	Available via data server and SMS
Comment	The command is intended to request passive faults (DM2) from vehicle CAN bus.

COMMAND FORMAT

password GCANDM2;

REPLY FORMAT

CANDM2=answer;

parameters:

• **answer** – device reply on the request:

  OK – the request has been successfully sent. After processing the command, passive codes will be recorded in the device memory.

  ERROR – an error occurred while sending the request to CAN bus;

  NO_CAN – the device is not equipped with CAN bus.

SAMPLE COMMAND

• via SMS
```
1234zxcv GCANDM2;
```

• via server
```
GCANDM2;
```

SAMPLE REPLY

• on SMS:
```
52500()#CANDM2=OK;
```

• on command via server:
```
CANDM2=OK;
```

The DM2 request is successfully sent to the vehicle CAN bus.

GVIN – VIN request

Command	GVIN
Description	VIN request
Supported with firmware	9.70 and higher
Setting	Available via data server and SMS
Comment	The command is intended to request Vehicle Identification Number (VIN) from vehicle CAN bus.

COMMAND FORMAT

password GVIN;

SAMPLE COMMAND

• via SMS

```
1234zxcv GVIN;
```

• via server

```
GVIN;
```

SAMPLE REPLY

• on SMS:

```
52500()#VIN=1234567890;
```

• on command via server:

```
VIN=1234567890;
```

The VIN of the vehicle equipped with the device 52500 is 1234567890.

GVCH – BCX request

Command	GVIN
Description	BCX request
Supported with firmware	9.70 and higher
Setting	Available via data server and SMS
Comment	The command is intended to request engine BCX from vehicle CAN bus.

COMMAND FORMAT

password GVCH;

REPLY FORMAT

GVCH=answer;

parameters:
• **answer** – device reply on the BCX request:
  OK – the request has been successfully sent. After processing the command, the vehicle BCX will be recorded in the device memory.
  ERROR – an error occurred while sending the request to CAN bus;
  NO_CAN – the device is not equipped with CAN bus.

SAMPLE COMMAND

• via SMS
`1234zxcv GVCH;`

• via server
`GVCH;`

SAMPLE REPLY

• on SMS:
`52500()#VCH=OK;`

• on command via server:
`VCH=OK;`

The BCX request is successfully sent to the vehicle CAN bus.

GCIN – engine number request

Command	GCIN
Description	CIN request
Supported with firmware	9.70 and higher
Setting	Available via data server and SMS
Comment	The command is intended to request vehicle engine number from CAN bus.

COMMAND FORMAT

password GCIN;

SAMPLE COMMAND

• via SMS

```
1234zxcv GCIN;
```

• via server

```
GCIN;
```

SAMPLE REPLY

• on SMS:

```
52500()#CIN=84657143;
```

• on command via server:

```
CIN=84657143;
```

The CIN of the vehicle equipped with the device 52500 is 84657143.

GCANFF – Freeze Frame request

Command	GCANFF
Description	Freeze Frame request
Supported with firmware	9.70 and higher
Setting	Available via data server and SMS
Comment	The command is intended to request Freeze Frame from vehicle CAN bus.

COMMAND FORMAT

password GCANFF;

REPLY FORMAT

CANFF=answer;

parameters:
- **answer** – device reply on the Freeze Frame request:
  OK – the request has been successfully sent. After processing the command, Freeze Frame parameters will be recorded in the device memory.
  ERROR – an error occurred while sending the request to CAN bus;
  NO_CAN – the device is not equipped with CAN bus.

SAMPLE COMMAND
- via SMS
`1234zxcv GCANFF;`

- via server
`GCANFF;`

SAMPLE REPLY
- on SMS:
`52500()#CANFF=OK;`

- on command via server:
`CANFF=OK;`

The Freeze Frame request is successfully sent to the vehicle CAN bus.

CANNOVA – extended CAN records

Command	CANNOVA
Description	Extended CAN records
Request command	GCANNOVA
Supported with firmware	9.90 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up identifiers of extended records from CAN bus.

COMMAND FORMAT

password CANNOVA=id1,id2,id3,id4,id5;

parameters:
- **id1** – ISOBUS identifier;
- **id2** – AdBlue identifier;
- **id3** – identifier of tire pressure record;
- **id4** – identifier of tachograph records (supported by AutoGRAPH controllers with firmware of version AGXL-11.44-beta1 and higher; for other controllers, the parameters is reserved);
- **id5** – reserved;

SAMPLE COMMAND
- via SMS
```
1234zxcv CANNOVA=18FEE500,00000000,20FFFC3B,00000000,00000000;
```

- via server
```
CANNOVA=18FEE500,00000000,20FFFC3B,00000000,00000000;
```

SAMPLE REPLY
- on SMS:
```
52500()#CANNOVA=18FEE500,00000000,20FFFC3B,00000000,00000000;
```

- on command via server:
```
52500()#CANNOVA=18FEE500,00000000,20FFFC3B,00000000,00000000;
```

The device 52500 is set up to record ISOBUS and tire pressure data from CAN bus.

TUNECAN – CAN protocol tuning

Command	TUNECAN
Description	CAN protocol tuning
Request command	GTUNECAN
Supported with firmware	10.30 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable tuning of CAN protocol. This feature allows to adapt the AutoGRAPH device to operate with other CAN protocols – set up CAN identifiers, mask, start bits, coefficients and other details of the required protocol. By default the AutoGRAPH device is set up to J1939 CAN protocol.

COMMAND FORMAT

password TUNECAN=status;

parameters:
• **status** – enable tuning of CAN protocol:
  1 – enabled;
  0 – disabled.

SAMPLE COMMAND

• via SMS
`1234zxcv TUNECAN=1;`

• via server
`TUNECAN=1;`

SAMPLE REPLY

• on SMS:
`52500()#TUNECAN=1;`

• on command via server:
`TUNECAN=1;`

CAN tuning is enabled in the device 52500.

CANSPEED – CAN baudrate

Command	CANSPEED
Description	CAN bus baudrate
Request command	GCANSPEED
Supported with firmware	10.30 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up the device CAN bus baudrate.

COMMAND FORMAT

password CANSPEED=baudrate;

parameters:
• **baudrate** – CAN bus baudrate in kbit/s: 100, 125, 250, 500, 1000;

SAMPLE COMMAND

• via SMS
```
1234zxcv CANSPEED=250;
```

• via server
```
CANSPEED=250;
```

SAMPLE REPLY

• on SMS:
```
52500()#CANSPEED=250;
```

• on command via server:
```
CANSPEED=250;
```

The device 52500 CAN bus baudrate is set up to 250 kbit/s.

CANTUNEMAIN – CAN protocol tuning (main data)

Command	CANTUNEMAIN
Description	CAN protocol tuning (main data)
Request command	GCANTUNEMAIN
Supported with firmware	10.30 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up CAN protocol to receive main records.

COMMAND FORMAT

password CANTUNEMAIN=data1:data2:data3:data4:data5:data6:data7:data8:data9:data10;

parameters:
- **data1** – total fuel used in litres;
- **data2** – total engine hours;
- **data3** – engine speed in rpm;
- **data4** – coolant temperature in °C;
- **data5** – oil temperature in °C;
- **data6** – total distance in meters;
- **data7** – fuel level in %;
- **data8** – AdBlue level in %;
- **data9** – other level data in %;
- **data10** – other level data in %.

To enable the required CAN record, it is necessary to set up following parameters of that record:
- **identifier;**
- **mask;**
- **start bit;**
- **data dimension;**
- **initial parameter value corresponding to 0.**

The parameters of data must be listed comma separated in the specified order. Empty fields must be filled by 0.

SAMPLE COMMAND

- via SMS

```
1234zxcv CANTUNEMAIN=18FEE900,FFFFFFFF,0,0.5,0:18FEE500,FFFFFFFF,
0,0.05,0:0,0,0,0,0:18FEEE00,FF,24,0.004,0:0,0,0,0,0:0,0,0,0,0:0,
0,0,0,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0;
```

• via server

```
CANTUNEMAIN=18FEE900,FFFFFFFF,0,0.5,0:18FEE500,FFFFFFFF,0,0.05,0:
0,0,0,0,0:18FEEE00,FF,24,0.004,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:
0,0,0,0,0:0,0,0,0,0:0,0,0,0,0;
```

SAMPLE REPLY

• on SMS:

```
52500()#CANTUNEMAIN=18FEE900,FFFFFFFF,0,0.5,0:18FEE500,FFFFFFFF,
0,0.05,0:0,0,0,0,0:18FEEE00,FF,24,0.004,0:0,0,0,0,0:0,0,0,0,0:0,
0,0,0,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0;
```

• on command via server:

```
CANTUNEMAIN=18FEE900,FFFFFFFF,0,0.5,0:18FEE500,FFFFFFFF,0,0.05,0:
0,0,0,0,0:18FEEE00,FF,24,0.004,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:0,
0,0,0,0:0,0,0,0,0:0,0,0,0,0;
```

Following settings of CAN protocol is set up in the device 52500:

• Total used fuel record:
  identifier – 18FEE900;
  mask – FFFFFFFF;
  start bit – 0;
  dimension – 0.5;
  initial value – 0.

• Engine hours:
  identifier – 18FEE500;
  mask – FFFFFFFF;
  start bit – 0;
  dimension – 0.05;
  initial value – 0.

• Engine speed record – disabled;

• Coolant temperature record:
  identifier – 18FEEE00;
  mask – FF;
  start bit – 24;
  dimension – 0.004;
  initial value – 0.

• Oil temperature record – disabled;
• Fuel level record – disabled;
• AdBlue level record – disabled;
• Other level record – disabled;
• Other level record – disabled.

CANTUNECOMMON – CAN protocol tuning (common data)

Command	CANTUNECOMMON
Description	CAN protocol tuning (common data)
Request command	GCANTUNECOMMON
Supported with firmware	10.30 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up CAN protocol to receive common records.

COMMAND FORMAT

password CANTUNECOMMON=data1:data2:data3:data4:data5:data6:data7:data8:data9:data10;

parameters:
- **data1** – cruise speed in km/h;
- **data2** – accelerator pedal position in %;
- **data3** – engine load in %;
- **data4** – engine fuel rate in litres per hour;
- **data5** – throttle state in %;
- **data6** – barometric pressure in Pa;
- **data7** – fuel temperature in °C;
- **data8** – intake temperature in °C;
- **data9** – air inlet pressure in Pa;
- **data10** – engine oil pressure in Pa.

To enable the required CAN record, it is necessary to set up following parameters of that record:
- **identifier;**
- **mask;**
- **start bit;**
- **data dimension;**
- **initial parameter value corresponding to 0.**

The parameters of data must be listed comma separated in the specified order. Empty fields must be filled by 0.

SAMPLE COMMAND

- via SMS

```
1234zxcv CANTUNECOMMON=18FEF100,FF,40,1,0:CF00300,FF,8,0.4,0:
CF00300,FF,16,0.4,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:
0,0,0,0,0:0,0,0,0,0:18FEEF00,FF,24,4,0;
```

• via server

```
CANTUNECOMMON=18FEF100,FF,40,1,0:CF00300,FF,8,0.4,0:CF00300,FF,
16,0.4,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:
0,0,0,0,0:18FEEF00,FF,24,4,0;
```

SAMPLE REPLY

• on SMS:

```
52500()#CANTUNECOMMON=18FEF100,FF,40,1,0:CF00300,FF,8,0.4,0:
CF00300,FF,16,0.4,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:
0,0,0,0,0:0,0,0,0,0:18FEEF00,FF,24,4,0;
```

• on command via server:

```
CANTUNECOMMON=18FEF100,FF,40,1,0:CF00300,FF,8,0.4,0:CF00300,FF,
16,0.4,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:0,0,0,0,0:
0,0,0,0,0:18FEEF00,FF,24,4,0;
```

Following common data settings of CAN protocol is set up in the device 52500:

• Cruise speed:
  identifier – 18FEF100;
  mask – FF;
  start bit – 40;
  dimension – 1;
  initial value – 0.

• Accelerator pedal position:
  identifier – CF00300;
  mask – FF;
  start bit – 8;
  dimension – 0.4;
  initial value – 0.

• Engine load:
  identifier – CF00300;
  mask – FF;
  start bit – 16;
  dimension – 0.4;
  initial value – 0.

• Engine fuel rate – disabled;
• Throttle – disabled;
• Barometric pressure – disabled;
• Fuel temperature – disabled;
• Intake temperature – disabled;
• Air inlet pressure – disabled;
• Engine oil pressure – disabled;

CANTUNEBOOL – CAN protocol tuning (boolean data)

Command	CANTUNEBOOL
Description	CAN protocol tuning (boolean data)
Request command	GCANTUNEBOOL
Supported with firmware	10.30 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up CAN protocol to receive boolean records.

COMMAND FORMAT

password CANTUNEBOOL=data1:data2:data3:data4:data5:data6:data7: data8:data9:data10: data11:data12:data13:data14:data15:data16;

parameters:
- **data1** – cruise control state;
- **data2** – brake switch state;
- **data3** – clutch switch state;
- **data4** – parking brake state;
- **data5** – other boolean parameter 1;
- **data6** – other boolean parameter 2;
- **data7** – other boolean parameter 3;
- **data8** – other boolean parameter 4;
- **data9** – other boolean parameter 5;
- **data10** – other boolean parameter 6;
- **data 11** – other boolean parameter 7;
- **data 12** – other boolean parameter 8;
- **data 13** – kickdown;
- **data 14** – idle;
- **data 15** – other boolean parameter 9;
- **data 16** – other boolean parameter 10;

To enable the required CAN record, it is necessary to set up following parameters of that record:
- **identifier;**
- **mask;**
- **start bit;**

The parameters of data must be listed comma separated in the specified order. Empty fields must be filled by 0.

SAMPLE COMMAND

• via SMS

```
1234zxcv CANTUNEBOOL=18FEF111,FF,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0: 0,
0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0;
```

• via server

```
CANTUNEBOOL=18FEF111,FF,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,
0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0;
```

SAMPLE REPLY

• on SMS:

```
52500()#CANTUNEBOOL=18FEF111,FF,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:  0,
0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0;
```

• on command via server:

```
CANTUNEBOOL=18FEF111,FF,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0:0,
0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0:0,0,0;
```

Following boolean data settings of CAN protocol is set up in the device 52500:

• Cruise control state:
  identifier – 18FEF111;
  mask – FF;
  start bit – 0;

• Brake switch state – disabled;
• Clutch state – disabled;
• Parking brake – disabled;
• Other boolean parameter 1 – disabled;
• Other boolean parameter 2 – disabled;
• Other boolean parameter 3 – disabled;
• Other boolean parameter 4 – disabled;
• Other boolean parameter 5 – disabled;
• Other boolean parameter 6 – disabled;
• Other boolean parameter 7 – disabled;
• Other boolean parameter 8 – disabled;
• Kickdown – disabled;
• Idle – disabled;
• Other boolean parameter 9 – disabled;
• Other boolean parameter 10 – disabled;

CANTUNEOTHER – CAN protocol tuning (other data)

Command	CANTUNEOTHER
Description	CAN protocol tuning (other data)
Request command	GCANTUNEOTHER
Supported with firmware	10.30 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up CAN protocol to receive other additional records.

COMMAND FORMAT

password CANTUNEOTHER=data1:data2:data3:data4:data5:data6:data7:data8:data9:data10;

parameters:
• **data1-data10** – CAN records;

To enable the required CAN record, it is necessary to set up following parameters of that record:
• **identifier;**
• **mask;**
• **start bit;**
• **record type;** This parameters ranges from 1 to 65524, 0 and 65525 disables the record reading.

The parameters of data must be listed comma separated in the specified order. Empty fields must be filled by 0.

SAMPLE COMMAND

• via SMS:
```
1234zxcv CANTUNEOTHER=18FEE111,FF,0,55:0,0,0,0:0,0,0,0:0,0,0,0:0,
0,0,0:0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0;
```

• via server:
```
CANTUNEOTHER=18FEE111,FF,0,55:0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0:
0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0;
```

SAMPLE REPLY

• on SMS:

```
52500()#CANTUNEOTHER=18FEE111,FF,0,55:0,0,0,0:0,0,0,0:0,0,0,0:0,
0,0,0:0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0;
```

• on command via server:

```
CANTUNEOTHER=18FEE111,FF,0,55:0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0:
0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0:0,0,0,0;
```

Following additional data settings of CAN protocol is set up in the device 52500:

identifier – 18FEF111;
mask – FF;
start bit – 0;
type – 55.

CANCON – CAN protocol tuning (conditions)

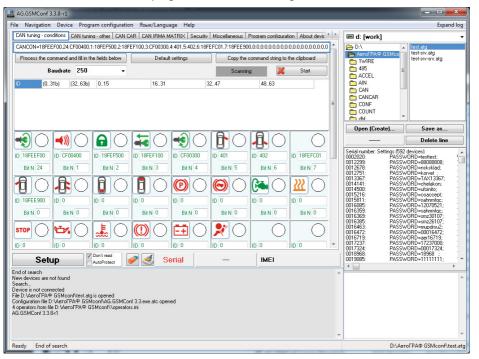| Command	CANCON
Description	CAN protocol tuning (conditions)
Request command	GCANCON
Supported with firmware	AGEX-12.31 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up CAN protocol to receive vehicle statuses and flags from CAN bus.

COMMAND FORMAT

password CANCON=data1:data2...;

parameters:
• **data1...** – CAN records;

CANCON command is generated automatically when configuring CAN bus of AutoGRAPH controller in the AG.GSMConf program (on the "CAN tuning – conditions" tab).

To simplify remote configuration procedure of AutoGRAPH controller, it is recommended to prepare the "CANCON" command in the AG.GSMConf program.

SAMPLE COMMAND

• via SMS:

```
1234zxcv CANCON=18FEEF00,24:CF00400,1:18FEF500,2:18FEF100,3:
CF00300,4:401,5:402,6:18FEFC01,7:18FEE900,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:18FEE900,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0;
```

• via server:

```
CANCON=18FEEF00,24:CF00400,1:18FEF500,2:18FEF100,3:CF00300,4:401,5:
402,6:18FEFC01,7:18FEE900,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:18FEE900,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0;
```

SAMPLE REPLY

• on SMS:

```
52500()#CANCON=18FEEF00,24:CF00400,1:18FEF500,2:18FEF100,3:
CF00300,4:401,5:402,6:18FEFC01,7:18FEE900,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:18FEE900,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0;
```

• on command via server:

```
CANCON=18FEEF00,24:CF00400,1:18FEF500,2:18FEF100,3:CF00300,4:401,5:
402,6:18FEFC01,7:18FEE900,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:18FEE900,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:0,0:
0,0:0,0:0,0:0,0:0,0:0;
```

CANCAR1...6 – CAN bus settings for light vehicles

Command	CANCARx
Description	CAN protocol tuning (conditions)
Request command	GCANCARx
Supported with firmware	AGEX-12.31 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up data recording from CAN bus of light vehicles.

COMMAND FORMAT

password CANCARx=data;

parameters:
• **data**– CAN bus settings;
• **x** – a number from 1 to 6.

The settings of CAN bus for certain light vehicle are provided by the manufacturer of AutoGRAPH controller (TechnoKom Ltd.).

To set AutoGRAPH controller to read data from CAN bus of a light vehicle:

• Send the request by e-mail to technical support of TechnoKom Ltd. (support@tk-nav.com) with the subject "CAN CAR test" and containing a model and a production year of your vehicle. The connection description and CAN bus configuration file will be sent in reply. The configuration file contains the list of prepared CANCAR commands.
• Copy the received file into AutoGRAPH Server – in the \Conf folder of AutoGRAPH controller which is being configured. At next communication period, this file will be sent to AutoGRAPH controller.

CANIRMA – IRMA MATRIX connection settings

Command	CANIRMA
Description	IRMA MATRIX connection settings
Request command	GCANIRMA
Supported with firmware	10.42 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up operation of the AutoGRAPH device with IRMA MATRIX APC system via CAN bus.

COMMAND FORMAT

password CANIRMA=status:door1:door2:door3:door4:door5:door6:door7:door8,delay;

parameters:
- **status** – IRMA MATRIX connection via CAN bus:
  0 – disabled;
  1 – enabled.
- **door1...8** – vehicle door settings (up to 8 doors). To set up the required door, it is necessary to specify door options comma separated and in the following order:
  - **number of the device digital input** which the door limit switch is connected to.
  - **the digital input state** corresponding to the closed door.
- **delay** – a time delay of a door closing detection by AutoGRAPH controller. The delay is specified in ms and available for controllers with firmware AGEX-12.36 or higher. If a firmware version of the controller to be set up is older than AGEX-12.36, the CANIRMA command must be used without the "delay" parameter.

All command parameters must be specified. Empty fields must be filled by random settings.

SAMPLE COMMAND
- via SMS
```
1234zxcv CANIRMA=1:1,1:3,0:8,1:8,
1:8,1:8,1:8,1:8,1,600;
```

- via server
```
CANIRMA=1:1,1:3,0:8,1:8,1:8,1:8,
1:8,1:8,1,600;
```

SAMPLE REPLY
- on SMS:
```
52500()#CANIRMA=1:1,1:3,0:8,1:8,
1:8,1:8,1:8,1:8,1,600;
```

- on command via server:
```
CANIRMA=1:1,1:3,0:8,1:8,1:8,1:8,
1:8,1:8,1,600;
```

The device 52500 is set up to operate with two IRMA MATRIX sensors. The sensors are installed in the door 1 and door 2 of vehicle. Processing of other vehicle doors is disabled by pressing random settings.

SETTINGS PROTECTION

SUPERPASSWORD − enabling/ disabling settings protection

Command	SUPERPASSWORD
Description	Enabling / disabling settings protection
Request command	GSUPERPASSWORD
Supported with firmware	7.30 and higher
Setting	Available only via data server
Comment	The command is intended to enable or disable the device settings protection from modification.

COMMAND FORMAT

SUPERPASSWORD=level,password:author;

parameters:
- **level** – protection level that will be set after processing the command:
  - **0** – no protection;
  - **1** – server settings protection;
  - **2** – full protection of all device settings;
  - **3** –protection from firmware update via USB.
- **password** – protection password. To set the protection, a new password must be specified. To reset existing protection, the password that has been set already in the device is required. Password must be 8 characters long and may contain numbers from 0 to 9, uppercase and lowercase letters of Latin alphabet.
- **author** – company details providing the protection. This parameter is supported by AutoGRAPH devices with firmware of version 10.20 and higher. For AutoGRAPH devices which firmware version is lower than 10.20, the command must be specified without this parameter: *SUPERPASSWORD=level,password;*

SAMPLE COMMAND

The sample of settings the protection of level 1 with password *TK123456*
```
SUPERPASSWORD=1,TK123456:TechnoKom Ltd, 454008 Chelyabinsk, phone:
+7(351)225-0555, E-mail: mail@tk-chel.ru;
```

SAMPLE REPLY
```
SUPERPASSWORD=1,TK123456:TechnoKom Ltd, 454008 Chelyabinsk, phone:
+7(351)225-0555, E-mail: mail@tk-chel.ru;
```

The device server settings are protected with password TK123456 by TechnoKom Ltd.

ENTERSPASSWORD – temporary protection reset

Command	ENTERSPASSWORD
Description	Temporary protection reset
Supported with firmware	7.30 and higher
Setting	Available via data server and SMS
Comment	The command is intended to disable temporary the device protection, e.g. to send new settings to the device. Temporary disabled protection is restored by remote command *"EXITSPASSWORD"* or after the device reset. The device reset can be provided by remote command *"RESET"*, once a day or by the device power reset.

COMMAND FORMAT

password ENTERSPASSWORD=sec_password;

parameters:
• **sec_password** – protection password installed in the device.

REPLY FORMAT
• **ENTERTRUE** – the protection has been successfully disabled;
• **ENTERFALS** – unable to disable the protection.

SAMPLE COMMAND
• via SMS
```
1234zxcv ENTERSPASSWORD=qwertyui;
```

• via server
```
ENTERSPASSWORD=qwertyui;
```

SAMPLE REPLY
• via SMS
```
52500()#ENTERTRUE;
```

• via server
```
ENTERTRUE;
```

The device 52500 settings protection is temporary disabled.

To restore the protection without the device restart, send the command EXITSPASSWORD. The command is available both via data server and SMS.

SAMPLE COMMAND
• via SMS
```
1234zxcv EXITSPASSWORD;
```

• via server
```
EXITSPASSWORD;
```

PASSWORD − server password changing

Command	PASSWORD
Description	Server password changing
Supported with firmware	Supported by AutoGRAPH devices starting from serial number 32500
Setting	Available only via data server
Comment	The command is intended to change the device password providing access to data server which the device transfers data to.

COMMAND FORMAT

PASSWORD=new_password;

parameters:
- **new_password** – the 8-digit new password to access to data server. The server password can contain only uppercase and lowercase letters of Latin alphabet and digits from 0 to 9.
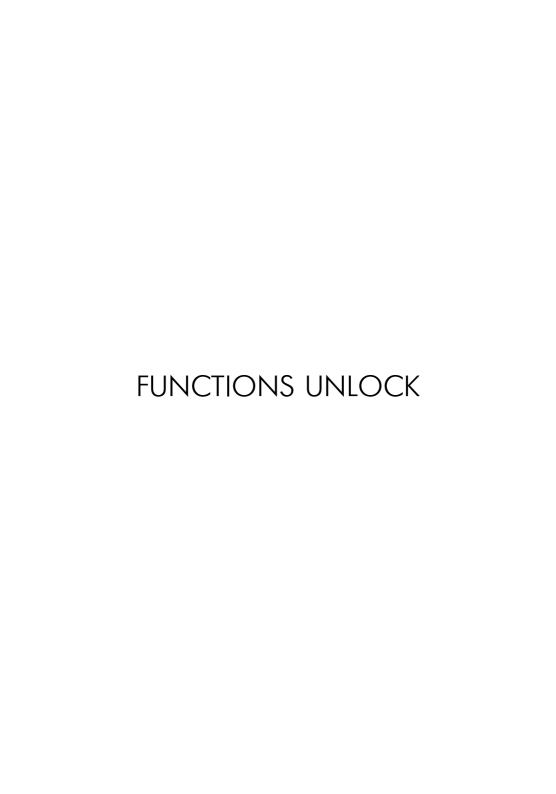
SAMPLE COMMAND

`PASSWORD=asdfghjk;`

SAMPLE REPLY

`PASSWORD=asdfghjk;`

The server password of the device 52500 is changed to asdfghjk.

If the device is served by the AutoGRAPH server of version 3.0, the password changing requires that the file password.txt stored in the device folder on the data server is deleted. Once the file has been deleted, new file with the device new password is created on the server. If the password.txt file with the device old password hasn't been deleted, the data transmission to server is unavailable.

To be able to load the device data from server, the device password must be changed to a new one in the device settings (for the AutoGRAPH.NET software) and in the atg. file which is stored in the dispatch software folder (for the AutoGRAPH dispatch software of version 3.0 and 4.0).

FUNCTIONS UNLOCK

UNLOCK – device functions unlock

Command	UNLOCK
Description	Device functions unlock
Supported with firmware	10.51 and higher
Setting	Available via data server and SMS
Comment	The command is intended to unlock the AutoGRAPH device functions which are supplied with locked functionality.

COMMAND FORMAT

password UNLOCK=param,unlock_key;

parameters:
- **param** – number of device function to be unlocked;
- **unlock_key** – the 8-digit password providing the function unlock. The certain function requires the specific password which cannot be used to unlock other functions of that or other devices.

NOTE

To get an unlocking password, contact the device manufacturer. The full list of device functions and their numbers are given in the GSMConf application on the Hardware lock tab.

REPLY FORMAT

UNLOCK=param,answer;

parameters:
- **param** – number of device function requested to be unlocked;
- **answer** – the device reply on the unlock request:
  - if the correct password has been specified in the unlock request, the required function will be unlocked and the device will return the unlocking password in reply.
  - if incorrect password has been specified (the password has not matched the password stored in the device), the device will return the string *FALSE* in reply.

SAMPLE COMMAND
- via SMS
```
1234zxcv UNLOCK=1,GFJKG1M3;
```

- via server
```
UNLOCK=1,GFJKG1M3;
```

SAMPLE REPLY
- via SMS
```
52500()UNLOCK=1,GFJKG1M3;
```

- via server
```
UNLOCK=1,GFJKG1M3;
```

The function 1 (data transmission in AutoGRAPH protocol) is unlocked in the device 52500.

MISCELLANEOUS COMMANDS

NOMOVEOUTSET − enable outputs switching only at stops

Command	NOMOVEOUTSET
Description	Enable outputs switching only at stops
Request command	GNOMOVEOUTSET
Supported with firmware	5.7 and higher
Setting	Available via data server and SMS
Comment	The command is intended to enable digital outputs switching only at stops.

COMMAND FORMAT

password NOMOVEOUTSET=param1,param2,param3,param4;

parameters:
- **param1** – turn on digital output 1 only at stops:
  0 – disabled;
  1 – enabled;
- **param2** – turn off digital output 1 only at stops:
  0 – disabled;
  1 – enabled;
- **param3** – turn on digital output 2 only at stops:
  0 – disabled;
  1 – enabled;
- **param4** – turn off digital output 2 only at stops:
  0 – disabled;
  1 – enabled;

SAMPLE COMMAND
- via SMS
```
1234zxcv NOMOVEOUTSET=0,0,1,0;
```

- via server
```
NOMOVEOUTSET=0,0,1,0;
```

SAMPLE REPLY
- on SMS:
```
52500()#NOMOVEOUTSET=0,0,1,0;
```

- on command via server:
```
NOMOVEOUTSET=0,0,1,0;
```

The device 52500 is set up to turn on digital output 2 only at stops and turn off the output at stops and during the motion. The digital output 1 can be turned on and turned off at stops and during the motion.

NOSENDSMS – disable SMS notification of inputs triggering

Command	NOSENDSMS
Description	Disable SMS notification of inputs triggering
Request command	GNOSENDSMS
Supported with firmware	5.7 and higher
Setting	Available via data server and SMS
Comment	The command is intended to disable SMS notifications of digital inputs triggering if the device analog input 2 switches to the selected level.

COMMAND FORMAT

password NOSENDSMS=param1,param2;

parameters:
- **param1** – SMS notification of digital inputs triggering if analog input 2 triggers:
  - 0 – enables notifications;
  - 1 – disables notifications;
- **param2** – voltage level on the analog input 2 reaching that disables notifications of inputs triggering:
  - 0 – (-)Vin level;
  - 1 – (+)Vin level.

SAMPLE COMMAND
- via SMS
```
1234zxcv NOSENDSMS=1,0;
```

- via server
```
NOSENDSMS=1,0;
```

SAMPLE REPLY
- on SMS:
```
52500()#NOSENDSMS=1,0;
```

- on command via server:
```
NOSENDSMS=1,0;
```

The device 52500 is set up not to send notification of digital inputs triggering if analog input 2 is connected to -Vin.

TELAKN – low battery notification

Command	TELAKN
Description	Low battery notification
Request command	GTELAKN
Supported with firmware	5.7 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up a phone number which the device will send a notification of backup battery discharging. The notification is sent when battery voltage level drops below 11 V.

COMMAND FORMAT

password TELAKN=tel_num;

parameters:
- **tel_num** – phone number of low battery notification. Phone number must be specified without spaces with prefix for national call (e.g. +7). If no number is specified, the device does not send the notification;

SAMPLE COMMAND
- via SMS
```
1234zxcv TELAKN=89000000000;
```

- via server
```
TELAKN=89000000000;
```

SAMPLE REPLY
- on SMS:
```
52500()#TELAKN=89000000000;
```

- on command via server:
```
TELAKN=89000000000;
```

The device 52500 is set up to send a notification about battery discharging to phone number 89000000000.

To disable the notification, send the command *password TELAKN=;* (where *password* is the device password) to the device.

SPEEDOUT − enable frequency speed output

Command	SPEEDOUT
Description	Enable frequency speed output
Request command	GSPEEDOUT
Supported with firmware	10.11 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up the device outputs as frequency outputs in order to indicate vehicle current speed using any external indicator. The outputs provide frequency signal proportional to vehicle speed n such way that 0,7 Hz accounts for 1 km/h.

COMMAND FORMAT
password SPEEDOUT=out1,out2;

parameters:
• **out1** – indicate the speed using the digital output 1:
  0 – disabled;
  1 – enabled;
• **out2** – indicate the speed using the digital output 2:
  0 – disabled;
  1 – enabled;

SAMPLE COMMAND
• via SMS
```
1234zxcv SPEEDOUT=1,0;
```

• via server
```
SPEEDOUT=1,0;
```

SAMPLE REPLY
• on SMS:
```
52500()#SPEEDOUT=1,0;
```

• on command via server:
```
SPEEDOUT=1,0;
```

The device 52500 is set up to indicate vehicle speed on digital output 1, the output 2 operates in normal mode.

SMSFORMAT – coordinates format in device SMS

Command	SMSFORMAT
Description	Coordinates format in device SMS
Request command	GSMSFORMAT
Supported with firmware	10.23 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up coordinates format in SMS notifications which the device sends to customer. Coordinates can be sent as a link to an online map service or as longitude and latitude values.

COMMAND FORMAT

password SMSFORMAT=link;

parameters:

- **link** – link to online map service which will be used to send vehicle coordinates. When specifying the link, change a latitude by AGLAT and a longitude by AGLON. The device supports following map services: Google-Satellite, Google-Maps, Yandex-Satellite, Yandex-Maps.

SAMPLE COMMAND

- via SMS
```
1234zxcv SMSFORMAT=http://maps.yandex.ru/?text=%AGLAT%,%AGLON%&l
=map;
```

- via server
```
SMSFORMAT=http://maps.yandex.ru/?text=%AGLAT%,%AGLON%&l
=map;
```

SAMPLE REPLY

- on SMS:
```
52500()#SMSFORMAT=http://maps.yandex.ru/?text=%AGLAT%,%AGLON%&l=map;
```

- on command via server:
```
SMSFORMAT=http://maps.yandex.ru/?text=%AGLAT%,%AGLON%&l=map;
```

The device 52500 is set up to send coordinates as a link to Yandex-Maps service.

To set up the device to send coordinates as a longitude and latitude values, send the command *SMSFORMAT=;*.

EXTERNPARAM − record data from external source

Command	EXTERNPARAM
Description	Record data from external source
Supported with firmware	10.23 and higher
Setting	Available via data server and SMS
Comment	The command is intended to record data from an external device connected to the AutoGRAPH device. After the recording, the data will be sent to server.

COMMAND FORMAT

password EXTERNPARAM=data_type,data;

parameters:
- **data_type** – record type;
- **data** – data to be recorded;

SAMPLE COMMAND
- via SMS

```
1234zxcv EXTERNPARAM=10,250;
```

- via server

```
EXTERNPARAM=10,250;
```

SAMPLE REPLY
- on SMS:

```
52500()#EXTERNPARAM=10,250;
```

- on command via server:

```
EXTERNPARAM=10,250;
```

The number 250 will be recorded in parameter 10 of the device 52500.

RECORD AND TRANSMISSION OF FILES

SDDEBUG – log files record and transmission

Command	SDDEBUG
Description	Log files record and transmission
Request command	GSDDEBUG
Supported with firmware	AGXL-11.60 and higher
Setting	Available via data server and SMS
Comment	The command is intended to set up recording of system logs in the device SD-card (or eMMC memory depending on the device modification) and transmission to server.

COMMAND FORMAT
password SDDEBUG=log,send;

parameters:
- **log** – log types to record:
  0 or 255 – disables logs recording;
  1 – enables CAN bus logs recording;
  2 – enables accelerometer log recording;
  3 – enables recording of external GNSS receiver (NMEA) logs;
  4 – enables recording of Atol tachograph logs;
  5 – enables logging of APC data transmission to an external device via RS-485-2 bus;
  6 – enables recording of RS-485 (RS-485-1) logs;
  7 – enables recording of GSM logs;
  8 – enables recording of eco driving mode logs;
  9 – enables recording of RS-232 logs.

- **send** – logs and files transmission to server immediately after recording:
  1 – enabled. Immediately after recording the file, AutoGRAPH controller tries to send this file. It is not possible – there is other file to transfer in a queue or GPRS is not available, the file will be stored in the controller's memory without other attempt to re-transfer it;
  0 – disabled. In this case device logs and files are transmitted to server by the request from AutoGRAPH 5 PRO dispatch software.

SAMPLE COMMAND
- via SMS
```
1234zxcv SDDEBUG=2,1;
```

- via server
```
SDDEBUG=2,1;
```

SAMPLE REPLY
- on SMS:
```
52500()#SDDEBUG=2,1;
```

- on command via server:
```
SDDEBUG=2,1;
```

The device 52500 is set up to record and send accelerometer logs to server

SENDALL – logs and files transmission

Command	SENDALL
Description	Logs and files transmission
Request command	GSENDALL
Supported with firmware	AGEX-12.20 and higher.
Setting	Available via data server and SMS
Comment	The command is intended to set up transmission of logs and files from the device SD card/ eMMC.

COMMAND FORMAT

password SENDALL=send_data,wifi;

parameters:
• **send_data** – automatic transmission of logs and files from the device SD card/ eMMC:

1 – enables logs and files transmission. Immediately after the command processing AutoGRAPH controller makes an attempt to send collected files and logs. The data will be send as soon as the allowed transmission channel becomes available. Hereafter logs and files are send immediately as they are recorded into SD card / eMMC. After the transmission all transmitted files are deleted from the device memory. If the allowed network is not available at the moment of transmission, files will be stored in the device SD card / eMMC until the network becomes available.

0 – disabled. In this case device logs and files are transmitted to server by the request from AutoGRAPH 5 PRO dispatch software.

• **wifi** – data transmission channel:

1 – enables files and logs transmission only via Wi-Fi (relevant to AutoGRAPH-GSM+WiFi and AutoGRAPH-WiFi controllers). Wi-Fi connection settings can be specified in the device using Wi-Fi module configuration commands.

0 – enables files and logs transmission via any available network – WiFi or GSM (relevant to AutoGRAPH-GSM\GSM+ and AutoGRAPH-GSM+WiFi controllers). The high-priority network is Wi-Fi.

SAMPLE COMMAND
• via SMS
```
1234zxcv SENDALL=1,1;
```

• via server
```
SENDALL=1,1;
```

SAMPLE REPLY
• on SMS:
```
52500()#SENDALL=1,1;
```

• on command via server:
```
SENDALL=1,1;
```

The device 52500 is set up to transfer logs and files only via Wi-Fi.

REMOTE FIRMWARE UPDATE

FWUPDATE – firmware update via GPRS

Command	FWUPDATE
Description	Firmware update via GPRS
Supported with firmware	10.23 and higher. Also the command requires the device loader version is higher than 2.0
Setting	Available via data server and SMS
Comment	The command is intended to update the device firmware via GPRS.

COMMAND FORMAT

password FWUPDATE=update;

parameters:
- **update** – firmware update:
    2 – load beta version;
    1 – load realise version;
    0 – cancel firmware update.

SAMPLE COMMAND

• via SMS
```
1234zxcv FWUPDATE=1;
```

• via server
```
FWUPDATE=1;
```

SAMPLE REPLY

• on SMS:
```
52500()#FWUPDATE=1;
```

• on command via server:
```
FWUPDATE=1;
```

⚠️ **IMPORTANT**

Having processed the command, the device sends the reply and starts the firmware loading via GPRS. The loading can take up to 10 minutes. Do not turn off the device during that time.

AutoGRAPH DEVICE SMS NOTIFICATIONS

Digital input triggering

The AutoGRAPH device can send SMS notification to the specified phone number when a digital input triggers.

NOTIFICATION FORMAT

serial(alias)#GPRS:input numin:timein:curent position;

parameters:

- **serial** – device serial number;
- **alias** – device alias (if specified);
- **numin** – number of triggered input;
- **timein** – input triggering time (in UTM);
- **current position** – vehicle position and movement direction at the moment of input triggering.

SAMPLE NOTIFICATION

```
52500()#GPRS:input 1:092516:092516.000,A,4805.8021,N,01132.2243,
E,1.9,183.8,240211;
```

The device 52500 has sent the notification of digital input 1 triggering. The input triggered at 9:25:16 am (in UTM). The vehicle position and curse at the moment of the input triggering are
```
092516.000,A,4805.8021,N,01132.2243, E,1.9,183.8,240211;
```

where
- **092516.000** – time of last position acquisition in UTM (9 hours 25 minutes 16 seconds 000 milliseconds);
- **A** – coordinates validity flag (in case of invalid coordinates the device sends flag **V**);
- **4805.8021** – latitude (48 degrees 05.8021 minutes);
- **N** – north latitude (or S if south latitude);
- **01132.2243** – longitude (011 degrees 32.224 minutes);
- **E** – east longitude (or W if west);
- **1.9** – vehicle speed in knots (1 knot is equal to 1.8 km/h);
- **183.8** – vehicle curse in degrees from North.
- **240211** – date (24.02.11)

Low backup battery voltage

The AutoGRAPH device can send SMS notification to the specified phone number when backup battery voltage drops below 11 V.

NOTIFICATION FORMAT

serial()#BATTERY LOW;

parameters:

• **serial** – device serial number;

SAMPLE NOTIFICATION

`52500()#GPRS:BATTERY LOW;`

The device 52500 has sent the notification of backup battery discharging.

Entrance to checkpoint / Exit from checkpoint

The AutoGRAPH device can send SMS notification to the specified phone number when vehicle enters to a check point or exit from it.

NOTIFICATION FORMAT

serial(alias)#Point Numpoint Direction:curent position;

parameters:

- **serial** – device serial number;
- **alias** – device alias (if specified);
- **numin** – number of checkpoint;
- **direction** – notification event : "In" if vehicle has entered to the point, "Out" if vehicle has exited from the point.
- **current position** – vehicle position and movement direction at the moment of notification.

SAMPLE NOTIFICATION

```
52500()#Point 1 In:092516.000,A,4805.8021,N,01132.2243,E,1.9,
183.8,240211;
```

The device 52500 has sent the notification about entering to check point 1. The vehicle position and curse at the moment of the entrance are:

```
092516.000,A,4805.8021,N,01132.2243, E,1.9,183.8,240211;
```

where

- **092516.000** – time of last position acquisition in UTM (9 hours 25 minutes 16 seconds 000 milliseconds);
- **A** – coordinates validity flag (in case of invalid coordinates the device sends flag **V**);
- **4805.8021** – latitude (48 degrees 05.8021 minutes);
- **N** – north latitude (or S if south latitude);
- **01132.2243** – longitude (011 degrees 32.224 minutes);
- **E** – east longitude (or W if west);
- **1.9** – vehicle speed in knots (1 knot is equal to 1.8 km/h);
- **183.8** – vehicle curse in degrees from North.
- **240211** – date (24.02.11)

GLONASS ◆ GPS

AutoGRAPH

VEHICLE AND PERSONAL TRACKING SYSTEM

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