

# **FM Pro, FM Eco & FM Tco**

## **SMS Commands List**

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# 1 SMS

There is a possibility to send SMS message to FM device. FM device answers with SMS message too. This is an easy way to quickly interact with FM device. SMS messages are used:

- to get specific information from FM device;
- to reconfigure some parameters of FM device;
- to influence FM device work.

SMS structure: "**(password) (command) (command text)**"

Password, command and command text are separated by space symbol.

Password – if there is no password, then you need to write just space symbol before the command.

Usually command text parameters are separated by 'comma (,) symbol.

## 1.1 Commands

### 1.1.1 Coords – current coordinates

SMS message is used to get current GPS status. Response has 8 parameters.

Parameter	Description
Time	Current GMT date & time.
lat.	Current latitude.
long.	Current longitude.
alt.	Current altitude (meters).
sat.	Currently visible satellites.
dir.	Current angle.
hdop	Current HDOP level.
state	Current GPS/GLONASS state: 1-off, 2-on no fix, 3-on got fix, 4-not responding, 5-sleep, 6-disabled.

Example: *pass coords*

Response example: *2013-04-24 07:01, lat. 46.1443183, long. 11.881766, alt. 217.5, sat. 8, dir. 198.10, hdop 100, state 3*

### 1.1.2 Version – FM device version

SMS message is used to get current FM device version. Response has 5 parameters.

Parameter	Description
1	Bootloader version.
2	Firmware version.
3	Hardware version.
4	GSM signal level.
5	Voltage status: 0 – lower then 8 Volts (bad), 1- higher then 8 Volts (OK).

Example: *pass version*

Response example: *5402,00.02.15,1089,5,1*

### 1.1.3 Gsminfo – GSM/GPRS information

SMS message is used to get GSM and GPRS information. Response has 15 parameters.

Parameter	Title	Description
<b>ST</b>	Start Time	Date & time (GMT) from the last FM device reset/power ON.
<b>GSM network</b>		
<b>OP</b>	Operator	GSM operator number
<b>lvl</b>	Level	GSM signal level.
<b>LAC</b>	Location Area Code	16 bit number thereby allowing 65536 location areas within one GSM PLMN.
<b>CID</b>	Cell ID	A GSM Cell ID (CID) is a generally unique number used to identify each Base Transceiver Station (BTS) or sector of a BTS
<b>FM device modem parameters (M)</b>		
<b>I</b>	Initialization	The number of times when FM device has tried to initialize modem since Start Time (ST).
<b>R</b>	Reset	The number of resets of modem since Start Time (ST).
<b>SP</b>	Status Pin	The number of times when modem was turned ON and turned OFF unsuccessfully.
<b>GPRS service</b>		

<b>GPRS</b>	General Packet Radio Service	Status of GPRS. There are two possible values: 0 – no GPRS / 1 – attached to GPRS.
<b>O</b>	Opened	The number of opened GPRS sessions.
<b>C</b>	Closed	The number of closed GPRS sessions.
<b>E</b>	Error	The number of GPRS errors.
<b>Link with server (LK)</b>		
<b>O</b>	Opened	The number of opened links.
<b>C</b>	Closed	The number of closed links.
<b>E</b>	Error	The number of link errors,
<b>TMO</b>	Timeout	The number of server response timeout.
<b>Reset</b>		
<b>RS</b>	Reset	FM device last reset source. Possible causes: 08, 03, 01 – reset was because of modem power loss; 04 – reset because of watchdog; 10 – reset because of Firmware update;
<b>P</b>	Protocol	GPRS protocol version: 0 – standard protocol; 1 – extended protocol.

Example: *pass gsminfo*

Response example: *ST:2013.04.20 23:26:33; OP 22210,lvl 15,LAC 20030, CID: 28289; M:I 126, R 125, SP: 0; GPRS 0:O 64, C 0, E 248; LK:O 575, E 1, TMO 126; RS: 04; P 0*

### 1.1.4 Imei

SMS message is used to get device IMEI number.

Example: *pass imei*

Response example: *IMEI: 863071016796615*

### 1.1.5 Reset

SMS message is used to reset FM device.

Example: *pass reset*

Response example: *Resetting device*

### 1.1.6 Connect – custom connection

SMS message is used to force FM device to connect (for one time) to server with custom IP, port and protocol

settings. FM device creates dummy record just with header part. Triggered event ID = 0 (zero). SMS has three parameters. SMS format: *pass connect IP,Port,Protocol*

Parameter	Description
IP	32-bit number, commonly known as an Internet Protocol address (xxx.xxx.xxx.xxx).
Port	16-bit number, commonly known as the port number (xxxxxx).
Protocol	The principal of communication. There are two available protocols: TCP and UDP.

Example: *pass connect 192.168.0.1,7011,TCP*

Response example: *connection data ok*

### 1.1.7 Econnect – emergency custom connection

SMS message is used to force FM device to connect (for one time) to server with custom APN, user, pass, IP, port and protocol settings. FM device creates dummy record just with header part. Triggered event ID = 0 (zero). SMS has five parameters. SMS format: *pass econnect apn,apnLogin,apnPassword,IP,Port,Protocol*

Parameter	Description
APN	An Access Point Name (APN) is the name of a gateway between a GPRS (or 3G, etc.) mobile network and another computer network, frequently the public Internet.
User	User name for APN settings.
Pass	Password for APN settings.
IP	32-bit number, commonly known as an Internet Protocol address (xxx.xxx.xxx.xxx).
Port	16-bit number, commonly known as the port number (xxxxxx).
Protocol	The principal of communication. There are two available protocols: TCP and UDP.

Example: *pass econnect apn,apnlogin,apnpass,192.168.0.1,7011,TCP*

Response example: *Emergency connection data ok*

### 1.1.8 Getapn – get APN parameters

SMS message is used to get APN (APN), username (USER), password (PSW), IPs (IP1, IP2), ports (Port1, Port2) and protocol (TCP/UDP) settings (described in 3.1.6) from FM device.

Example: *pass getapn*

Response example: *APN: banga User: PSW: IP1: 92.62.134.38 Port1: 9021 IP2: 195.14.173.3 Port2: 9000 TCP/UDP: 0*

\*TCP/UDP: 0 – TCP, 1 – UDP.

### 1.1.9 Setconnection – change connection configuration

SMS message is used to permanently change FM device configuration settings: APN, APN username, APN password, protocol, IP1, PORT1, IP2, and PORT2 (parameter description: 3.1.6).

SMS format: *pass setconnection apn,apnlogin,apnpassword,Protocol,IP1,Port1,IP2,Port2*

Example: *pass setconnection apn,apnlogin,apnpass,TCP,111.111.111.111,1111,222.222.222.222,2222*

Response example: *set connection data ok*

If one of the parameters should be preserved, then the specific location for the parameter should be filled with *\*old\**. For example, ip1 and port1 should be preserved (old value should remain):

Example: *pass setconnection apn,apnlogin,apnpass,TCP,\*old\*,\*old\*,222.222.222.222,2222*

Response example: *set connection data ok*

If the message is not ending with port2, then those parameters, which are not mentioned in the message should not be changed. For example ip2 and port2 were not in the message:

Example: *pass setconnection apn,apnlogin,apnpass,TCP,111.111.111.111,1111*

Response example: *set connection data ok*

If configuration failed to set when FM device sends response: *Set connection data incorrect*

### 1.1.10 Switchip – switch primary IP and port

SMS message is used to change current primary IP and port (IP1, Port1 or IP2, Port2).

SMS format: *pass switchip X*

*X* – which IP and port should be primary

IP1 primary set example: *pass switchip 1*

Response example: *Setting primary IP OK*

IP2 primary set example: *pass switchip 2*

Response example: *Setting primary IP OK*

If the operation was unsuccessful then the answer is: *Setting primary IP FAIL*

### 1.1.11 Setio – set outputs

SMS message is used to set Dout1 and Dout2 output level. Values: 0 – low, 1 – high, 2 – do not change. Remember: Douts have to be connected to electric circuit correctly.

SMS format: *pass setio X1,X2*

*X1* – state of Dout1

*X2* – state of Dout2

Example: *pass setio 0,1*

Response example: *SETIO configuration data ok*

If configuration SMS is incorrect, device will response: *SETIO configuration data incorrect*



### 1.1.12 Getio – read inputs/outputs states

SMS message is used to get status about Dout1, Dout2, Din1, Din2, Din3, Din4, Ain1 and Ain2. Values: 1 – high, 0 – low. Analog inputs – millivolts.

SMS format: *pass getio*

Answer SMS format: *DIN1=X,DIN2=X,DIN3=X,DIN4=X,DOUT1=X,DOUT2=X,AIN1=Y,AIN2=Y*

X – Digital value: 1 – high, 0 – low.

Y – analog value in millivolts.

Example: *pass getio*

Response example: *DIN1=0,DIN2=1,DIN3=1,DIN4=1,DOUT1=0,DOUT2=0,AIN1=4210,AIN2=8600*

### 1.1.13 Delrecords – delete all records

SMS message is used to delete all records from internal flash memory FM device memory.

Example: *pass delrecords*

Response example: *All records deleted*

### 1.1.14 Modrev – modem revision

SMS message is used to get modem revision information. Answer SMS format: *Modem revision: 24\_symbol\_info*

Example: *pass modrev*

Response example: *Modem revision: 1137B06SIM900M64\_ST*

### 1.1.15 Caninfo – can configuration info

SMS message is used to get information about CAN settings of FM3 (about CAN1 settings for FM4) device (only works with Tco devices). These settings are used to see exact CAN interface setup in configuration file (it doesn't necessarily reflect actual mode of operation). Answer SMS format: *CAN enable: X Manufacturer Y Type Z Active A*

Parameter	Description										
CAN enable	0 – CAN is disabled / 1 – CAN is enabled, FMS standard mode / 2 – CAN is enabled, LCV mode / 3 – CAN is enabled, OBD mode / 4 – CAN is enabled, Tachograph mode.										
Manufacturer*	<p>Manufacture group of Light Commercial Vehicles (number value).</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VAG</td> </tr> <tr> <td>2</td> <td>Mercedes</td> </tr> <tr> <td>3</td> <td>Citroen</td> </tr> <tr> <td>4</td> <td>Ford</td> </tr> </tbody> </table>	Value	Name	1	VAG	2	Mercedes	3	Citroen	4	Ford
Value	Name										
1	VAG										
2	Mercedes										
3	Citroen										
4	Ford										

		5	Fiat
		6	Opel
		7	Renault
		8	Toyota
		9	FMS Tractor
Type*	Type of Light Commercial Vehicle (number value).		
Active	0 – CAN mode is silent mode, 1 – CAN mode is active mode		

\*see *LCV\_select.txt* file in newest FM *Configurator* folder for up-to-date information.

Example: *pass caninfo*

Response example: *CAN enable: 2 Manufacturer 2 Type 1 Active 0*

\* CAN mode is LCV, vehicle manufacture group Mercedes, type is mercedes1, can is in silent mode.

### 1.1.16 Cansinfo – dual can configuration info

SMS message is used to get information about CAN1 and CAN2 settings of FM4 device (only works with Tco devices). These settings are used to see exact dual CAN interface setup in configuration file (it doesn't necessarily reflect actual mode of operation). Answer SMS format: *CAN1 enable: X Manufacturer Y Type Z Active A; CAN2 enable: X Manufacturer Y Type Z Active A (see caninfo message for fields description)*

Response example: *CAN1 enable: 2 Manufacturer 2 Type 1 Active 0; CAN2 enable: 2 Manufacturer 2 Type 1 Active 0*

### 1.1.17 Fastsleep

SMS message is used to shorten sleep time period to 30 seconds (default: 10 minutes) for one time (current time). Usually this command is used just for testing purpose.

Example: *pass fastsleep*

Response example: *Fast sleep after 30 s*

### 1.1.18 Getsd – SD card info

SMS message is used to get information about SD card inserted into FM Tco or FM Pro device. There are 4 available answers.

SD card is inserted and used for records: *Using SD Card for Records. Size: sector\_count x sector\_size B, H: SDrecordHead, T: SDrecordTail*

SD card is inserted and used for log: *Using SD Card for Log and working OK. Size: sector\_count x sector\_size B, H: SDrecordHead, T: SDrecordTail*

SD card is inserted and used for log, but some errors occurred: *Using SD Card for Log but ERROR. Size: sector\_count x*

*sector\_size B, H: SDrecordHead, T: SDrecordTail*

Parameter	Description
sector_count	the number of sectors in SD card.
sector_size	the size (in bytes) of one sector in SD card.
SDrecordHead	SD card address of the last of record's end.
SdrecordTail	SD card address of beginning of the first record.

SD card is not inserted: *Using Internal Flash*

Example: *pass getsd*

Response example: *Using SD Card. Size: 3911680 x 512 B, H: 6008, T: 5993*

### 1.1.19 Clear obd – clear OBD values

SMS message is used with FM Tco OBD (00.03.XX) device. Purpose is to clear all OBD (On-board diagnostic) related data in device memory (not configuration). It can be assumed as OBD values reset command.

Example: *pass clear obd*

Response example: *OBD parameters and DTC cleared*

### 1.1.20 IEversion – TCO extender version

SMS message is used with FM Tco TCO (00.04.XX) device. Purpose is to get extender's (optional external FM gadget) version. Answer SMS format: *conf:X,ver:Y*

X – status of extender gadget: 0 – no extender / 1 – tachograph is connected to Port A via extender / 2 – tachograph is connected to Port B via extender / 3 – tachograph is connected to FM Tco TCO device CAN.

Y – extender firmware version (text).

Example: *pass ieversion*

Response example: *conf:1,ver:IE.00.01*

### 1.1.21 Tacho – tachograph status

SMS message is used get tachograph status information. Answer SMS format: *TACHO status:X*

Status (X)	Description
0	Not available.
1	Everything is OK.
2	Tacho parameters not configured.
3	Extender not responding.

4	Tacho task is in progress.
5	Physical communication OK, logical is not OK.

Example: *pass tacho*

Response example: *TACHO status:1*

### 1.1.22 webcoords – Google maps hyperlink with coordinates

SMS message is used to get hyperlink to Goolge maps with coordinates, current vehicle speed and ignition status.

Parameter	Description
Time	GMT date & time of coordinates
Hyperlink	Hyperlink to Google maps with coordinates: latitude and longitude
Speed	Current vehicle speed, km/h
Ignition	Ignition status

Syntax: *pass webcoords*

Can be 3 differrent SMS message responses.

1. When GPS data is available.

Response example: *2015-05-11 13:01, https://www.google.com/maps/?q=54.7404933,25.2222366, speed: 94, ignition: ON*

2. When GPS not available.

Response example: *GPS data not available. Ignition: ON*

3. When GPS not available but was available then device can return last known coordinates and the time shows when the coordinates were taken.

Response example: *No GPS. Last entry: 2015-05-16 17:32, https://www.google.com/maps/?q=54.7404933,25.2222366, speed: 65, ignition: ON, current ignition: OFF*

### 1.1.23 setiotime – Set output for temporary period

Using this feature, FM is able to switch DOUT for temporary period of time. User must provide pulse lengths for logical '1' & '0' values.

SMS format example: **pass setiotime 1 500 0 500,0 200 1 300**

Description:

Parameter	Description
pass	SMS password

setiotime	Command Identifier
1	DOUT1 first logical state (1/0)
500	DOUT1 first logical state length (ms)
0	DOUT1 second logical state (1/0)
500	DOUT1 second logical state length (ms)
,	DOUT separator
0	DOUT2 first logical state (1/0)
200	DOUT2 first logical state length (ms)
1	DOUT2 second logical state (1/0)
300	DOUT2 second logical state length (ms)

Impulse resolution is 10 ms. Minimum impulse duration is 10 ms. If Eco-panel is connected, minimum resolution and duration is 50 ms. When the FM device receive the setiotime it stores the status of DOUT's and after the sequence restores the previous status. If one setiotime interrupts another, the state is **UNDEFINED** ('1' or '0') after both sequences are finished.

'0' means **GND** and '1' means **no GND**.

If one of the DOUT is configured as LED, Buzzer blocking or Jamming block, setiotime is not possible to use.

Additional feature.

It is possible to set a repeat amount of a sequence.

SMS format: **pass setiotime 1 500 0 500 n=10,0 200 1 300 n=20**

Description:

Parameter	Description
pass	SMS password
setiotime	Command Identifier
1	DOUT1 first logical state (1/0)
500	DOUT1 first logical state length (ms)
0	DOUT1 second logical state (1/0)
500	DOUT1 second logical state length (ms)
n	Repetition identifier
=	Setter symbol
10	Amount of repetitions
,	DOUT separator
0	DOUT2 first logical state (1/0)
200	DOUT2 first logical state length (ms)
1	DOUT2 second logical state (1/0)
300	DOUT2 second logical state length (ms)
n	Repetition identifier
=	Setter symbol
20	Amount of repetitions

Each single DOUT has 10 slots for impulses levels (high / low). No more than 10 can be defined for one DOUT.

Longest time possible is 999 999 999 ms. Max number of repeats is 9999.

Max impulse count – as many as you can fit into 160 symbols of SMS.

It is possible to interrupt a sequence with “pass setiotime 0 10,0 10” followed by setio SMS command “pass setio 1,1”.

The sequence would be interrupted and the states of DOUT's is defined that's it.

It is possible to set only one of the DOUT.

SMS format example for set DOUT1: **pass setiotime 1 500 0 500**

SMS format example for set DOUT2: **pass setiotime ,0 200 1 300**

Response example: *setiotime set OK*

If configuration SMS is incorrect, device will response: *setiotime syntax error in DOUTX settings: error text*

Where „DOUTX“ is DOUT1 or DOUT2. „Error text“ is described below in the table. It's minimal diagnostic when something wrong with impuse set in SMS.

Error text	Error description
other process controls output	Means that other functionality is configured on DOUT's. For example: LED or buzzer
no comma symbol	No comma separator. Comma is used to separate DOUT's configuration
wrong format	When was received not enough symbols
wrong level	Level can be only logical '1' or '0'. Other values is unacceptable
no space symbol	After level symbols ust to be space symbol
wrong ms number	Wrong time number
wrong repeat number	Wrong repeat count number
exceeded max slot	For one output is possible to set maximum 10 slot. If this count is exceeded this error is displayed
pulse is shorter than 10ms	Pulse length less than 10 miliseconds was set. It's not acceptable
other reason	Includes other reason not described in this table

### 1.1.24 Banned – temporary banned operators

SMS message is used with 4gen FM device. Purpose is to get information about temporary banned operators. Answer SMS format: *Already banned:X, Newly banned:Y, ops:ZZZ*.

Parameter	Description
<i>X</i>	Number of times when FM tried to ban operator which has already been in the banned list.
<i>Y</i>	Number of times when FM added operator in the banned list.
<i>ZZZ</i>	List of curently banned operators (which are still in the list).

Example: *pass banned*

Response example: *Already:1, Newly banned:1, ops:24602,*

### 1.1.25 accinfo

SMS message is used to check if accelerometer is calibrated for eco-driving functionality. Only state information is should be interpreted.

Parameter	Description
<i>State</i>	0 – not calibrated 1 – calibration started 2 – zero position calibration is in progress 3 – forward movement calibration paused 4 – forward calibration 5 – forward calibration in progress 6 – forward calibration in progress 11 – calibrated
<i>XYZo, N, ABC, N_, A_B_C_</i>	Parameters used for accelerometer events' calculations.

Example: *pass accinfo*

Response example: *AXL state:11; XYZo:0.0,0.0,1.0; N:-0.023; ABC:-0.15,0.9,0.32; N\_:0.8; A\_B\_C\_:1.24,-0.42,0.6*

### 1.1.26 accreset

SMS message is used to reset accelerometer (used for eco-driving functionality) calibration.

Example: *pass accreset*

Response example: *Acc reset OK*

### 1.1.27 lastchange

SMS message is used to know when last time the device configuration or primary server IP is changed.

Example: *pass lastchange*

If time not synchronized, or changes occur during that time, SMS content will be:

Response example: *lastchange ip: no time available; cfg: no time available*

If time is available:

Response example: *lastchange ip: 2015-11-09, 09:02; cfg: 2015-11-09, 10:02*

Configuration change date and time will be updated during any type of configuration modification.

*When device is connecting to GPRS and tries to open link (with different IP settings), IP change date and time will be updated. When device reconnects to server with same IP but different Port, IP change date and time will not be updated.*

### 1.1.28 SMS during critical process

*There are 4 critical processes:*

- *Firmware update*
- *Configuration update*
- *Tacho read*
- *Smart Card read*

*During these processes following SMS commands will be ignored:*

- *reset*
- *connect*
- *econnect*
- *switchip*
- *setconnection*
- *delrecords*
- *setcfg*
- *getcfg*
- *setioparam*
- *getioparam*
- *clear obd*
- *tacho*

*Response example: The device is busy with critical process. Please try again later.*

### 1.1.29 setcfg

This SMS message is dedicated to change FM parameters. During SMS configuration, SMS password must be used, after SMS password, user inputs parameter ID and parameter value:

*password **setcfg** ParamID1 Value1, ParamID2 Value2, ParamID3 Value3, ...*

**Examples:**

*password setcfg 101 wave, 102 pioneer, 103, 100 1*

Sets APN name: wave, APN user: pioneer, no APN password, Protocol: UDP

*password setcfg 4202 1, 4242 12, 4282 5, 4322 10, 4362 6*

Sets IO in 4 profile, slot 2. IO modem temperature: enabled, level is 12, delta is 5, average is 10

Only parameters provided with SMS are changed, others remain the same.

One SMS message can be 160 symbols long, so the maximum simultaneously transmitted parameters count in SMS message are limited to one message length.



Setcfg command, allow to change all parameters of the configuration except timetable (because it will not fit into one SMS message), passwords (configuration and SMS) and “enable SMS configuration”.

Following responses are provided for the number, which sent configuration by SMS:

- When successfully setting parameters with FM device: „Configuration parameter(s) was set!“
- Incorrect parameter setting: „Configuration parameter(s) was NOT set! Parameter No. 1 is incorrect“.
- Unsuccessful set-up, when parameters are locked: „Configuration parameter(s) was NOT set! Parameter No. 1 is locked“
- Unsuccessful set-up, when setting IO parameters, but not every setting was provided by SMS: „Configuration parameter(s) was NOT set! IO slot No. 9 is not fully set“.
- Unsuccessful set-up, when device is busy: „Configuration parameter(s) was NOT set! Device is busy try again later“
- If SMS config is disabled in configuration tool: „You do not have permission to change the settings“.

SMS configuration feature is enabled/disabled in configuration tool, in Authorized numbers section, by putting a checkbox by the „Enable SMS configuration“.

### 1.1.30 getcfg

Structure of getcfg SMS:

password **getcfg** id

This command is only used for get the current status of the parameter selected.

Maximum simultaneously received parameters in one SMS message is limited by SMS message length (160 symbols).

· When parameter ID is correct, FM-device answer: „ID: XXX,value:XXX;“

Example: ‘ID: 96,value:1000;’

Value can be string or number.

It can be requested few parameters read in one SMS message and when response not fit in one SMS message then in the end of the message will be phrase: “other values not fit”.

Example:

Request:

“password getcfg 100,101,102,110,120,111,121,130”

Response:

“ID: 100,value:1; ID:101,value:aerospace; ID:102,value:laguna; ID:110,value:101.16.17.245; ID:120,value:23451; ID:111,value:m2m.member.com; other values not fit”

· Parameters configuration password and SMS password are not reachable with this SMS. In this case, the device answer:

„ERROR: parameter(s) read is forbidden“

· If parameter ID is invalid, answer would be: „ID:XXX,value:requested ID not found;“

Example: “ID:556,value:requested ID not found;”

Other possible replies when something wrong:

“ERROR: request is empty”

“ERROR: wrong request syntax”

“ERROR: allowed numbers and commas only”

“ERROR: requested parameter ID too big”

“ERROR: requested parameter ID is low”

· If SMS configuration is disabled in configuration tool or configuration has password:

„You do not have permission to read the settings“

### 1.1.31 setioparam

Structure of setioparam SMS:

```
password setioparam  
id=id,profile=profile,enable=enable,level=level,delta=delta,average=average,eventon=eventon,include=include,pri  
ority=priority,switch=switch,edge=edge
```

Example:

```
01234567890123456 setioparam  
id=256,profile=4,enable=1,level=3500,delta=250,average=2000,eventon=2,include=1,priority=1,switch=1,edge=3
```

This SMS can be used in any way, but it must at least contain **Id,profile** and **enable** parameters. Shortest possible message should be written this way:

```
password setioparam id=id,profile=profile,enable=enable
```

Example:

```
01234567890123456 setioparam id=256,profile=4,enable=1
```

If the short version is used the other parameters are set with old values. **Id,profile** and **enable** parameters are mandatory to make a valid SMS command.

Note that only two spaces between *password*[space]**setioparam**[space]*id* are required. All other commands are separated by comma.

SMS can be written in lowercase and uppercase letters. Therefore, **setioparam** SMS is not case sensitive.

If SMS command doesn't define new values to **level, delta, average, eventOn, include, priority, switch** or **edge** parameters, it will not be changed. Previous value will remain.

When the FM-device receives the SMS where the parameter **enable** is set to 1, it searches in the current configuration if

this parameter with the same ID is already enabled.

- If parameter with the same ID was not enabled, FM-device will set this IO parameter to the first free slot that is available.
- If IO parameter with the same ID was enabled, FM-device will overwrite the IO parameter with new values.
- If FM-device finds more than one IO parameters with the same ID it will send an error message.

If newly created IO event is not set to specific parameters it will be set to default. Default values are listed below:

Level	Delta	Average	EventOn	Include	Priority	Switch	Edge
0	0	1000	2	0	0	0	0

For set **enable**, **eventOn**, **include**, **priority**, **switch** or **edge** it is necessary to indicate the state with a number:

Enable	EventOn	Include	Priority	Switch	Edge
0 – disable 1 – enable	0 – Hysteresis 1 – Change 2 – Monitoring	0 – not include data 1 – include data	0 – Low 1 – High	0 – no switch 1 – 1st profile 2 – 2nd profile 3 – 3rd profile 4 – 4th profile	0 – On Both 1 – On rising 2 – On falling

Following responses are provided for IO configuration by SMS:

- If IO parameter was set it correct, the FM-device would answer:

*„setioparam OK, slot: XX“*

Where ‘slot’ is the slot where the FM-device set parameter.

- If IO parameter was not set it correct, FM-device would answer:

*„setioparam ERROR, <explanation>”*

- If all slots are full, FM-device would answer:

*„setioparam ERROR, no free slots for set the I/O“*

- If FM-device finds more than one IO parameters with the same ID it would answer:

*“setioparam ERROR, more than one I/O with same ID”*

- If user sent a SMS to disable (enable field = 0), and the parameter is not found as enabled, FM-device would answer:

*„setioparam ERROR, parameter is already disable“*

- If SMS configuration is disabled in configuration tool:

*„You do not have permission to change the settings“*

### 1.1.32 getioparam

Structure of getioparam SMS:

password **getioparam** id,profile

This command is only used for get the current status of the IO parameter selected.

· If IO parameter was enabled, the FM-device would answer:

Example:

*“id=28,profile=3,enable=1,level=0,delta=0,average=1000,eventon=2,include=0,priority=0,switch=0,edge=0”*

· If IO parameter was not enabled, the FM-device would answer:

*„I/O ID XXX is NOT enabled“*

· If IO parameter ID is invalid, the FM-device would answer:

*„ERROR I/O ID XXX does not exist“*

· Other possible replies when is something wrong:

*“ERROR: I/O ID XXX read is forbidden”*

*“ERROR: more than one I/O parameter with same ID was found”*

*“ERROR: wrong request syntax”*

Where XXX – IO ID

· If SMS configuration is disabled in configuration tool or configuration has password:

*„You do not have permission to read the settings“*

### 1.1.33 setvalue – set specific IO values

Purpose is to set specific IO values.

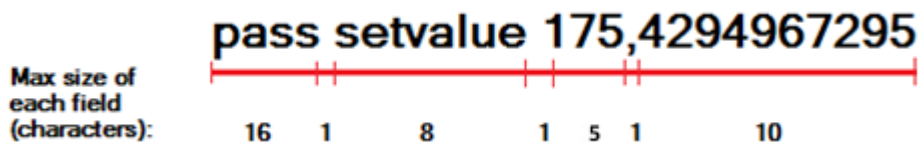
For now, this command is supported by IO parameters:

- Virtual odometer (ID:65)
- ECO Driving absolute idling time (ID:175).
- CAN Bus Distance (ID:114). Value will be overwritten by valid message from CAN-Bus

(if available in specific vehicle).

In general SMS structure is: *“(password) (command) (command text)”*

In “command text” field there will be ID and its value separated by comma (,).



The response format depends on these options:

1. If IO value was changed successfully, then format is: ID,value
2. If FM device failed to change IO value, then format is: ID,fail
3. If the value change for specified IO is not supported, then format is: ID,unsupp

4. If the FM device is even failed to parse the ID or data is incorrect: Set IO value data incorrect

Example: *pass setvalue 65,0*

Response example: *65,0*

Example: *pass setvalue 175,0*

Response example: *175,0*

Example: *pass setvalue 155,15*

Response example: *155,unsupp*

### 1.1.34 set3g

The structure of the command would be:

*password set3g 1/0/2*

The field enable/disable could have three values: '1' means enabled, '0' means disabled and '2' means automatic. Only current profile would be changed.

Example: *password set3g 1*

In this example, 3G would be enabled.

#### ***Response from FM device:***

Following responses are provided for the number, which sent the set3g by SMS.

· Response format:

*3G automatic/disabled/enabled mode set OK/FAIL (1/2/3/4-profile)*

If device enabled 3G. For all examples current profile is 1:

*“3G enabled mode set OK (1-profile)”*

· If device could not enabled 3G:

*“3G enabled mode set FAIL (1-profile)”*

· If device disabled 3G:

*“3G disabled mode set OK (1-profile)”*

· If device could not disable 3G:

*“3G disabled mode set FAIL (1-profile)”*

· If device change to automatic 3G:

*“3G automatic mode set OK (1-profile)”*

· If device could not change to automatic 3G:

· “3G automatic mode set FAIL (1-profile)”

· If field enabled/disabled is out of range:

“Set3G ERROR: Field is out of range”

· If HW version does not support 3G

“Set3G: Modem does not support 3G”

### 1.1.35 get3g

The structure of the command would be:

*password get3g*

No fields are required to fill into the SMS

*Example: password get3g*

#### **Response from FM device:**

Following responses are provided for the number, which sent the get3g by SMS.

Response format:

*automatic/disabled/enabled 3G mode, connected to 3G/GSM (1/2/3/4-profile)*

· If device has enabled 3G and status is OK. For all examples current profile is 3:

“*enabled 3G mode, connected to 3G (3-profile)*”

· If device has enabled 3G but it is not connected to the 3G network:

“*enabled 3G mode, connected to GSM (3-profile)*”

· If device has disabled 3G:

“*disabled 3G mode, connected to GSM (3-profile)*”

· If device has automatic selection 3G and it is working in 3G:

“*automatic 3G mode, connected to 3G (3-profile)*”

· If device has automatic selection 3G and it is working in GSM:

“*automatic 3G mode, connected to GSM (3-profile)*”

· If HW version does not support 3G:

“*Get3G: modem does not support 3G*”

### 1.1.36 gfota – update modem firmware over the FTP or HTTP server

This SMS is used to update modem firmware of a device with 3G GSM modem. Firmwares of 3G modems are in diff form so it only sends differences between new and current firmware. Because of this, current modem firmware has to be known before the update. Binary file of Modem firmware must be placed in FTP or HTTP server before update.

#### Modem firmware over the FTP server:

The structure of the command would be:

```
password dfota ftp://<user_name>:<password>@<server_URL>:<port>/<file_path>
```

<user\_name> - String type, the user name for authentication. The maximum size of the parameter is 50 bytes

<password> - String type, the password for authentication. The maximum size of the parameter is 50 bytes

<server\_URL> - String type, the IP address or domain name of the FTP server. The maximum size of the parameter is 50 bytes

<port> - Integer type, the port of the FTP server. The default value is 21. The range is 1 – 65535

<file\_path> - String type, the file name in FTP server. The maximum size of the parameter is 50 bytes

Example of FTP update command:

```
password dfota ftp://test:test@demo.com:21/update/delta.bin
```

#### Modem firmware over the HTTP server:

The structure of the command would be:

```
password dfota http://<http_server_URL>:<http_port>/<http_file_path>
```

<http\_server\_URL> - String type, the IP address or domain name of the HTTP server

<http\_port> - Integer type, the port of the HTTP server. The default value is 80. The range is 1 – 65535

<http\_file\_path> - String type, the file name in HTTP server

Example of HTTP update command:

```
password dfota http://www.example.com:80/delta.bin
```

**Note:** total SMS message size with password, command name and link to file can be maximum 160 bytes long!

#### Responses to sent commands:

After device receives dfota command it responds:

➤ When modem update was started successfully:

- Modem FW update process started. Check modem FW version with "modrev" command later

➤ When modem firmware update does not start because of bad SMS input:

- *ERROR: DFOTA FW update NOT supported on this modem* – when trying to update modem that is not 3G
- *ERROR: link string too short* – when minimum link requirements are not met
- *ERROR: wrong command syntax* – something wrong with command syntax
- *ERROR: DFOTA FW update process already started* – when update process was started previously
- *ERROR: other reason* – when is another error not described above

After modem FW update is finished FM device responds (does not work on SMS via GPRS):

➤ Modem firmware updated successfully:

- *Modem FW update process successful. Current modem version: xx*

➤ Modem firmware update failed:

- *Modem FW update process FAILED. Error code: xx*

(error codes are specified in modem documentation)

### 1.1.37 enginevolt – Automatic engine detection

This SMS message is used to automatically measure engine power voltage upper level, when engine is on and lower level, when engine is off. With these voltage levels the device will automatically detect, when the engine is on and when it is off. Measured voltage levels are used in all profiles. Before sending this SMS command the engine must be on.

The structure of the command would be:

*password enginevolt*

<password> - String type, the password for authentication. The maximum size of the parameter is 50 bytes

<enginevolt> - Automatic engine detection command.

If message structure is wrong, FM-device answers "*Unknown command*". If message structure is correct, then after FM-device measured upper voltage level, device answers "*Turn off engine*". After this response, engine must be turned off. When after 30 s, device measures lower voltage level. If engine detection is done, device answers "*Engine detection done*". If engine detection is not successful, response from the device is "*Engine detection error*".



### 1.1.38 lcvselect – LCV autoselect

SMS message is used to automatically select a correct LCV group and sub group combination. It reads and analyses CANbus line data. After that it searches for a match within its LCV profile database and selects the best possible configuration.

The structure of the command would be:

*pass lcvselect*

<password> -String type, the password for authentication. The maximum size of the parameter is 50 bytes

<lcvselect> -Automatic select of correct LCV group and sub group combination command name.

If SMS structure is correct, FM-device response:

*“LCV auto selection is in progress”*

If SMS structure is wrong, FM-device response:

*“Unknown command”*

If selection of LCV group and subgroup is failed, FM-device response:

*“LCV auto selection failed”*

The reasons can be these:

1. Wrong FM-device configuration (the conditions of correct configuration are available in „FM device configuration“ section below).
2. If no CAN data packets were received.
3. If failed to find matches in our database.

LCV selection is done after getting SMS message, which contains information about vehicles selected group and sub-group:

*“Configured group: Ford/Ford2”*

LCV group and subgroup will be configured automatically, after successful LCV group and subgroup selection. Desirable I/O parameters should be selected manually.

#### **FM device configuration**

The functionality of LCV Autoselection will work only in CAN silent mode. This functionality will not work with Toyota1, Toyota2 groups, because active mode for these groups is needed. Also, Tractor1, Tractor2, Truck1, Truck2, Claas1 and Komatsu1 groups will not work.

LCV selection can be performed if vehicle engine is started and if:

1. In both CAN1 and CAN2 interfaces LCV modes are selected.
2. In one CAN interface LCV mode is selected and another CAN interface is not enabled.
3. In one CAN interface LCV mode is selected and another CAN interface Tacho read, MobileEye or Trailers are selected.
4. Both CAN interfaces are not enabled.

### 1.1.39 getlog/stoplog – get device log remotely

Parameter	Description
IP	32-bit number, commonly known as an Internet Protocol address (xxx.xxx.xxx.xxx).
Port	16-bit number, commonly known as the port number (xxxxxx).
Mode	1 – send full log to server. All other values reserved for future functionalities.
Time	Time period for log sending. Defined in minutes. Range from 1 to 60 minutes.

SMS structure: *passgetlog,<ip>,<port>,<mode>,<Time>*

Example: *password getlog,192.168.0.1,80,1,15*

When device gets this command, it should open a link with defined server and send log according to defined mode. All other FM device processes (e.g. records sending, peripheral device communication) should keep working. Exception would be configuration or firmware update processes, they would stop log sending to server immediately.

Log sending to server will be interrupted by profile switch or operator search process. Log sending will continue automatically after process ends.

If data sending is disabled by configuration, log will not be sent and response will be: "Data sending is disabled."

Log will be sent as ASCII. Log starts from device type [HCV/LCV/PRO], selected mode, defined time, bootloader version, firmware version, hardware version, GSM signal level and Voltage status: 0 –lower than 8 Volts (bad), 1 –higher than 8 Volts (OK) and device IMEI.

Example:

*RemoteDebug HCV mode 1, 2min Version: 502B,00.02.11.08,98,26,1 IMEI: 863071019664272*

If getlog SMS format is incorrect the device will respond:

*getlog data incorrect*

Another SMS command would be used to stop log sending to server:

*pass stoplog*

When device gets this command and log sending is in progress, it should stop sending log to server and reply with SMS:

*stoplog ok*

If device gets this command when log is not being sent, then the reply should be:

*Error. Currently not sending log.*

If log sending was interrupted by some process, device will name that process in log.

At log end the device should send statistics:

*RemoteDebug stats: [actual time] / [set time] min, [bytes] sent [bytes] lost, log break [count]*

*RemoteDebug ended, time expired or RemoteDebug ended, user request.*

**Disclaimer:** this functionality was not design to be “bulletproof”, it was design to have as minimum as possible effect on main device functionality. It should not be used or it will not be very use full in critical condition, for example when device is in the aria where GSM signal level is low or device generating large records very rapidly.

### 1.1.40 Supported SMS commands table

	Eco3	Pro3	Tco3-OBD	Tco3-TCO	Eco4	Pro4	Lcv4	Tco4	Plug4
accinfo	•	•	•	•	•	•	•	•	•
accreset	•	•	•	•	•	•	•	•	•
banned		•	•	•	•	•	•	•	•
caninfo		•	•	•		•	•	•	
cansinfo						•	•	•	
clear obd			•				•	•	•
connect	•	•	•	•	•	•	•	•	•
coords	•	•	•	•	•	•	•	•	•
delrecords	•	•	•	•	•	•	•	•	•
econnect	•	•	•	•	•	•	•	•	•
fastsleep	•	•	•	•	•	•	•	•	•
getapn	•	•	•	•	•	•	•	•	•
getcfg					•	•	•	•	
getecu			•				•	•	
getio	•	•	•	•	•	•	•	•	
getioparam					•				
getioparam					•	•	•	•	
getsd			•	•		•	•	•	
gsminfo	•	•	•	•	•	•	•	•	•
ieversion				•					
imei	•	•	•	•	•	•	•	•	•
lastchange								•	
modrev	•	•	•	•	•	•	•	•	•
optiver				•				•	
plock	•	•	•	•	•	•	•	•	•
reset	•	•	•	•	•	•	•	•	•
setcfg					•	•	•	•	
setconnection	•	•	•	•	•	•	•	•	•
setio	•	•	•	•	•	•	•	•	
setioparam					•	•	•	•	
setiotime					•	•	•	•	
setvalue						•	•	•	
switchip	•	•	•	•	•	•	•	•	•
tacho				•				•	
version	•	•	•	•	•	•	•	•	•
webcoords					•	•	•	•	•
set3g						•	•	•	
get3g						•	•	•	
dfota						•	•	•	
enginevolt									•
lcvselect							•	•	
getlog/stoplog						•	•	•	

## 1.2 Informational messages, alerts

### 1.2.1 Driving rule violation, accident (FM-Pro3 only)

SMS message is sent if one of the following SMS alerts are configured: **overspeeding, harsh braking, extreme braking, harsh acceleration, DIN1, DIN2, DIN3, DIN4**. Purpose of this message is to inform about the driving rule violations or accidents.

*Message format:*

```
[violation type/accident type] (count)
...
...
[violation type/accident type] (count)
```

**count** – number of accidents or driving rule violations between messages.  
Message may contain **single** or **multiple** alerts.

*Violation/accident types:*

- Over speeding;
- Extreme braking;
- Harsh braking;
- Harsh acceleration;
- DIN1;
- DIN2;
- DIN3;
- DIN4.

*Examples:*

```
Overspeeding (5)
DIN1 (2)
Harsh braking (8)
```

### 1.2.2 SMS alerts with date & time (FM4 devices)

SMS message is sent if one of the following SMS alerts are configured: **overspeeding, power supply disconnecting, DIN1, DIN2, DIN3, DIN4 (ignition)**. Purpose of this message is to inform when these events was. Date & time is GMT. It need to configure phone number to which will be sent SMS alert.

*Message format:*

```
date1&time1-event1; date2&time2-event2; ...
```

*Examples:*

```
2015.05.01 16:24:01-device disconnected;
2015.06.02 22:05:16-ignition: ON; 2015.06.02 22:05:35-DIN1: OFF;
2015.06.14 08:30:45-overspeed;
```