OPERATOR'S MANUAL
FindMe F2
ADVANCED VERSION
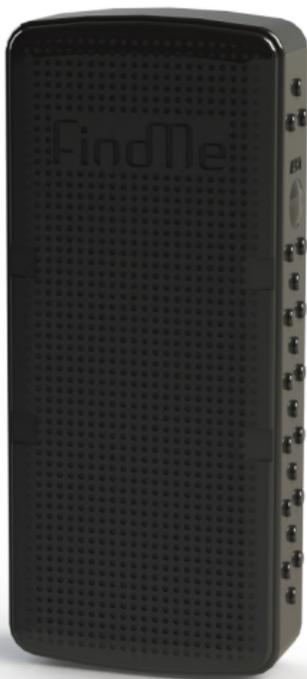
VERSION 1.00

DEAR USER,

Thank you for choice of FindMe F2 GPS/GLONASS Tracking Beacon! While developing this device, we paid special attention to such characteristics as reliability, ease of installation and operation, and performance. FindMe team is always in search of new effective solutions which can be useful for you! That is why we appreciate your opinion on our device operation! You can provide us your feedback, question, or proposal at **www.911.fm**. Hope FindMe F2 GPS/GLONASS Beacon will be your reliable companion for a long time!

If during setup or operation of the GPS/GLONASS beacon you did not find an answer for your question in this Manual, please, contact FindMe Technical Support Center by phone **8-800-100-28-77** (free call over Russia) or by phone **+7-812-318-18-80**. Working hours of Technical Support Center: from 9.00 till 18.00 Moscow time.

The manufacturer is entitled to make changes of the device design and software not impairing its performance without prior notice.

CONTENTS

CONTENTS

LIST OF TABLES

LIST OF PICTURES

1. PURPOSE

FindMe F2 GPS/GLONASS Tracking Beacon (hereinafter FindMe) is designed to transmit to a user its position coordinates with specified frequency using SMS messages and/or GPRS.

FindMe is used to handle the following problems:

- To determine position of vehicles (motor cars, motorcycles, boats, snowmobiles, etc.);
- To convoy valuable cargo;
- To track position of movable targets (trash containers, doghouses, etc.);
- To determine position of domestic animals;
- Alarm button.

2. PRINCIPLE OF OPERATION

Depending on SIM-card in use, FindMe operates according to one of two operating procedures.

Using pre-installed SIM-card, FindMe operates in one of two modes: standard or tracking The device stays in a sleeping mode most of the time. According to the time specified in the settings, the beacon "wakes up", determine its position, transmits data to 911.fm server, requests information regarding further operation mode from the server, and again goes to sleep. Frequency of contacts in the tracking and standard modes, as well as the tracking mode enabling / disabling is set up in personal area at www.911.fm. The tracking mode can be enabled / disabled also with SMS-commands. FindMe has no functionality to receive user commands and to transmit information to the server «by request». The device and the server communicate only according to the schedule. When using pre-installed SIM-card, FindMe operates only with 911.fm service.

After replacement of pre-installed SIM-card, FindMe operates with any service selected by the user except 911.fm service. Frequency of contacts is set up by SMS commands to be sent to the number of SIM-card installed in the device. The message shall include a password (4 digits and separating comma) and the required command. In accordance with the command parameters, time interval is set to awake the device and check for SMS messages received from the user. FindMe determines its position according to satellites of GPS/GLONASS navigation systems and can send this data in the form of SMS message to mobile phone

number programmed by the user or using GPRS information package to the monitoring server selected. Besides position data, the message can contain IDs of GSM base stations which are the nearest stations to the device position.

NOTE

*FindMe with pre-installed SIM-card can be controlled using free FindMe iRZ Online application for smartphones with Android Operating System. This application is available for downloading in Google Play app store at **https://play.google.com/store**.*

3. SPECIFICATIONS

Housing dimensions:
103x45x19 mm

Device weight:
105 g

Operating temperature range:
between -30°C and +70°C

GSM-module
850/900/1800/1900 MHz

GPS/GLONASS module

GSM-antenna

Batteries – 2 **Li-SOCl$_2$** batteries of **3600 mAh** total capacity, 3.6 V, 500 mA continuous discharge, at least 1 A peak pulse. Self-discharge is 1% per year.

SIM-card

4. RECOMMENDATIONS FOR INSTALLATION AND OPERATION

Installation of FindMe is one of the most important points. The tracking beacon installed in easy-to-access place will be easy and quickly found and deactivated!

Install the device with front panel faced up, away from moving elements, heat-generating parts and items. Also, do not install the device with its front panel faced to metal parts of the body.

Please, note that rate of position fix, communication quality, and battery operation time are influenced by many factors such as:

- FindMe installation location;
- room where FindMe is placed;
- distance from GSM base stations;
- ambient temperature;
- weather conditions;
- natural or artificial electromagnetic interferences, etc.

FindMe uses Li-SOCl$_2$ batteries to be installed and put into operation within 5 months from the date of their manufacture. When you use batteries manufactured 5 or more months ago, number of communication sessions and coordinates transmitted to the server will significantly reduce.

NEVER:

- use old and new batteries at the same time;
- use only one battery;
- use batteries with characteristics other than supplied in FindMe package.

Warning! Device operation in the tracking mode reduces significantly operational life of the in-built batteries!

NOTE

When sending SMS commands, please, note, that storage time of undelivered SMS messages at mobile operators is usually 24 hours. If activation interval of your device is more than 24 hours, you should repeat the command message provided that you have not any respond from the device within 24 hours.

5. WHAT TO DO IN CASE OF VEHICLE THEFT

If you have found loss of your car (any tracked target), observe the following guidelines:

1. Enable the tracking mode

● If the device has pre-installed SIM-card, send blank SMS message to number +7-(911)-770-8888. Within 3-5 minutes you will receive message notifying that the tracking mode is enabled and informing the scheduled time of FindMe contact.

● If pre-installed SIM-card is replaced in the device, send to the device number SMS message with a command to increase frequency of activation intervals up to 30 minutes and to set GPS/GLONASS positioning mode:

password,T1=30,mg

Then wait for reply SMS message about command execution.

NOTE

After sending to the device number the command to increase frequency of activation intervals DO NOT SEND any other commands until SMS message confirming the tracking mode activation is received, as the device executes only the last received command! Storage time of undelivered SMS messages at mobile operators is at least 24 hours, so when the device does not respond, you can repeat SMS command only in 24 hours.

2. Inform the nearest police department about theft.

> **⚠ Warning!** For your safety, it is strongly recommended not to take any actions to return stolen property without law enforcement employees.

3. If you received GPS position in the SMS message, inform law enforcement employees about this. Set this position as search criterion on Google Maps or Yandex Maps websites and see position of your car on the map. If your smartphone supports web browsing, click on the hyperlink in the message and go to the map segment with your car position.

4. If you have not contact from your device, it is most likely that the car is inside a garage (hiding place) or intruders use GPS/GSM signals rejector. As soon as the car is outside the garage and rejector is OFF, the device will be able to contact.

6. HOW TO OPERATE THE DEVICE
WITH PRE-INSTALLED SIM-CARD

The device with pre-installed SIM-card can operate in standard or tracking mode.

In standard mode, the device stays in sleeping mode most of the time and contacts the server according to the time schedule specified in the settings. Frequency of contacts can be set in the range of 1 – 7 days (by default once per day). You can also set time of the contact: automatically or manually. For automatically, FindMe will contact upon expiration of 24 hours from the last communication session. With manually selected, you can set the time of FindMe contact with the server at your own discretion in format hh:mm of Moscow time. FindMe determines its position using GSM base stations, battery charge level, ambient temperature. Using GPRS technology as communication channel, the device sends all data to the server, and then receives from the server operation mode settings you have set. Upon saving the current settings, the device goes into sleeping mode until the following contact.

You can enable / disable the tracking mode in personal area or by sending blank SMS message to number:

+7-(911)-770-8888. When information about tracking mode activation is received, the device contacts the server according to the schedule set in personal area. The setting range is between 3 minutes and 96 hours (by default once every 2 hours).

The device sends all data to the server, then the user receives them

in SMS message (if this feature is available and enabled in personal area). After receiving the message, you can view the device position on Yandex, Google, or OSM maps from any device including your mobile phone or tablet PC (if such functionality is available).

> **⚠ Warning!** Do not use SIM-card included into FindMe F2 package without device. SIM-card cannot be topped up. Pre-installed SIM-card has limited resource. Number of SMS notifications from 911.fm service is limited with balance of SIM-card pre-installed.

NOTE

The device can operate with 911.fm service only when using SIM-card installed into FindMe during manufacture. For pre-installed SIM-card service, contact FindMe authorized service centers, full list of which is available at www.911.fm.

6.1. HOW TO TURN ON AND LOG ON THE DEVICE

To turn on and log on the device perform the following steps:

1. Press «ACT» button on the FindMe side surface. For models with translucent housing, you will see that LED on the front panel is ON.

2. Send blank SMS message or text message with a desired name (e.g. "Fm2") to RN-number indicated on a sticker on the FindMe rear panel.

3. Within 3-10 minutes after sending SMS message, you will receive a message from FindMe to confirm successful turning on and a message from 911.fm service including log-on status and information to enter personal area at www.911.fm. where additional settings are available.

6.2. ENABLING THE TRACKING MODE

You can enable the tracking mode in personal area at www.911.fm or by sending blank SMS message to phone number +7-(911)-770-8888.

When information about tracking mode activation is received, FindMe contacts the server according to the schedule set. Frequency of contacts is set in personal area at www.911.fm in the range between 3 minutes and 96 hours.

> **Warning!** Device operation in the tracking mode reduces significantly operational life of the in-built battery!

6.3. DISABLING THE TRACKING MODE

You can disable the tracking mode in personal area at www.911.fm or by sending «Off" SMS message to phone number +7-(911)-770-8888.

When receiving information on disabling the tracking mode, FindMe switches to standard mode.

6.4. CHECK OF THE STATE

To check FindMe state, send "S" SMS message to phone number +7-(911)-770-8888.

In personal area at www.911.fm , you can activate user notification about the device state to be given once per 30 days.

6.5. HOW TO OPERATE SEVERAL DEVICES

To log on several FindMes with one phone number, follow the procedure described in **"How to turn on and log on the device"** for each device.

To enable the tracking mode, send text message with your device name to phone number +7-(911)-770-8888.

For example, *Fm2*.

To disable the tracking mode, send the following text message to phone number +7-(911)-770-8888:

Off Fm2

where Fm2 – your device name.

6.6. HOW TO WORK WITH IN-BUILT ACCELEROMETER

Using the in-built accelerometer, you can monitor start time and place of the tracked target movement, as well as receive SMS alerts.

The accelerometer is enabled in personal area at www.911.fm in FindMe parameters. When using accelerometer, the device operating procedure in the tracking mode changes: FindMe determines and transmits you its position at movement start, during movement, and at stop detection. During stop, FindMe switches automatically to the sleeping mode to save battery charge, exact positioning is not performed at this moment. When movement starts, the beacon wakes up and contacts the server according to settings specified for the tracking mode. The accelerometer does not affect operation in the standard mode.

7. REPLACEMENT OF BATTERIES

FindMe uses two Li-SOCl$_2$ batteries (3.6 V). To replace the batteries, do as follows:

1. Remove 6 screws (you will need mini cross screwdriver) and the device rear cover;
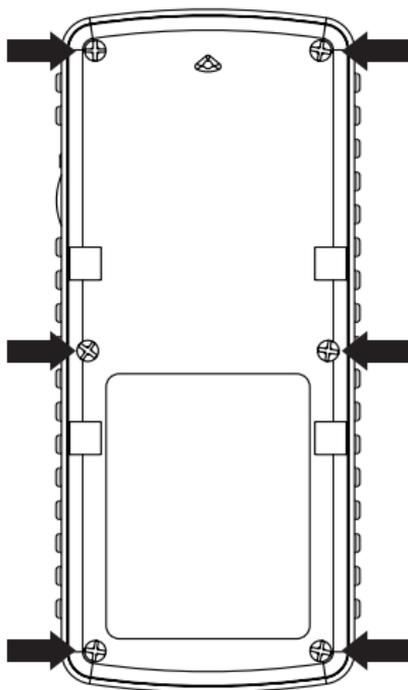
Pic. 1 Replacement of batteries – Removal of the device rear cover

2. Replace the battery observing polarity indicated on the bottom of battery compartment;
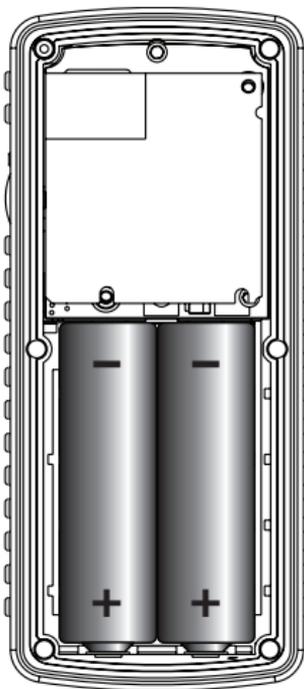
Pic. 2 Replacement of batteries

3. Install the rear cover and tighten 6 screws (you will need mini cross screwdriver).

Warning! The batteries should be put into operation within 5 months from the date of their manufacture! When you use batteries manufactured 5 or more months ago, number of communication sessions and coordinates transmitted to the server will significantly reduce.

NEVER:
- use old and new batteries at the same time;
- use only one battery;
- use batteries with characteristics other than supplied in FindMe package.

8. REPLACEMENT OF SIM-CARD

To replace SIM-card, do as follows:

1. Remove 6 screws (you will need mini cross screwdriver) and the device rear cover;
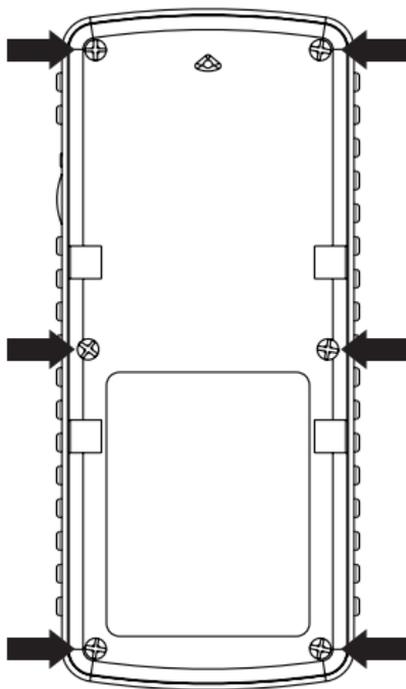
Pic. 3 Replacement of SIM-card – Removal of back cover

2. Remove the batteries;
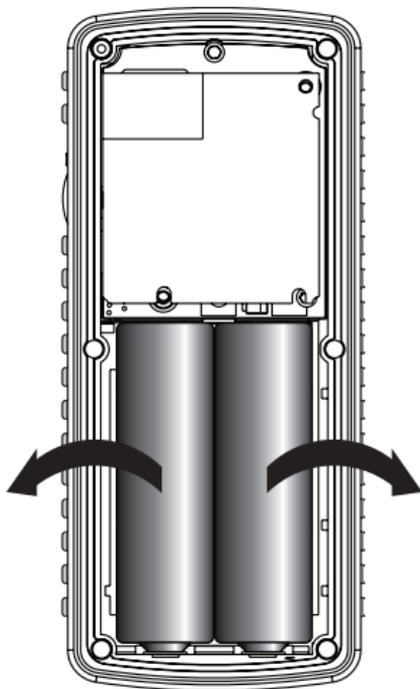
Pic. 4 Replacement of SIM-card – Removal of batteries

3. Remove screws fixing antenna and GSM module;
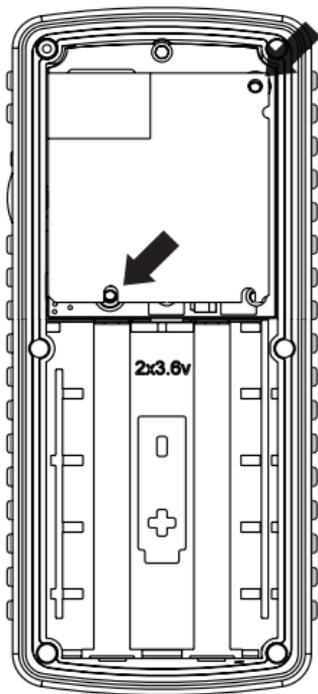
Pic. 5 Replacement of SIM-card – Removal of antenna and GSM-module

4. Disconnect antenna and GSM module;

5. Remove SIM-card and install the new one;
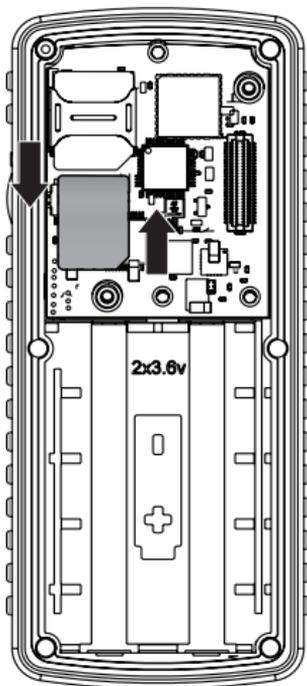
Pic. 6 Replacement of SIM-card – Removal of SIM-card

6. Install GSM module in place without disconnection of the antenna cable (for models with antenna cable);

7. Place brass spacers on their places and put the antenna on them;

8. Fix the antenna and GSM module with two screws;

9. Install the battery observing polarity indicated on the bottom of battery compartment;

10. Install the device rear cover and tighten 6 screws.

9. HOW TO OPERATE THE DEVICE AFTER SIM-CARD REPLACEMENT (ALTERNATE MODE)

For correct operation of FindMe, SIM-card installed by the user should be functional and have favorable balance on account. In SIM-card settings, pin-code request should be deactivated. We recommend to activate in advance personal area of SIM-card installed at the operator's website to monitor the balance, view details, and control the services.

9.1. HOW TO TURN ON AND LOG ON THE DEVICE

1. To turn on FindMe, press «ACT» button on the side surface. For models with translucent housing, you will see that LED on the front panel is ON.

2. Send SMS message from any phone number to the number of SIM-card installed in the device.

XXXX, +71234567890, rus

● XXXX – password for the device access, default value is 1234;
● +71234567890 – phone number to control the device;
● rus/eng – language selection (option).

Within 10 minutes, FindMe will send to the number you specified SMS confirmation of recording your new number.

NOTE

Be sure the reply SMS message with command confirmation is received! When the device receives SMS message with the correct password but wrong format of parameters, the device sends the reply SMS message

about error. If the received SMS message contains just one non-Latin character or wrong or no password, such message is completely ignored and the reply text message is not sent.

Without programmed number of the user FindMe will not execute any commands except recording the user number!

9.2. HOW TO SET THE CURRENT DATE AND TIME

Send the following SMS message to the device number:

XXXX, GMT=xx

where xx is your time zone. For Moscow region, this command will be as follows: **XXXX,GMT=04**.

Date and time will be determined according to GPS satellites, so the device should be located in the place where the sky is good viewable. When you fail to set time according satellites, use command of the date and time manual set: **time=** (see **"Device control commands", "Manual set of the current day and time"**). Range of settings for this command parameter is between -11 and + 13.

9.3. HOW TO SET MODES AND ACTIVATION INTERVALS

To set alarm clock time, date, and operation mode for each of two alarm clocks, send the following command to the device number:

XXXX,Tx=daymonthyear,hoursminutes,interval,mode
(For example, **1234,T1=08032014,1400,30M,G**).

Possible values of the interval (two-digit number + letter):

● between 15 and 59 for **M** letter (minutes);

● between 01 and 23 for **H** letter (hours);

● between 01 and 30 for **D** letter (days);

The device can operate in one of four modes: **F, G, S, A** or their combinations. Operation modes are described in **"Main operation modes"**.

> **!** **Warning!** We recommend you to use the first alarm clock to be activated once a day in combination with F mode (01D,F) when the device is in standby mode and sends you no messages. Set the second alarm clock with 7 day interval in combination with G mode (07D,G) to control the beacon performance, check its parameters and avoid the account blocking by the operator for long inactivity. In this case, FindMe will be activated to control new commands available from the user once a day and send SMS messages with position once per week. Such settings are default for the alarm clocks.

9.4. HOW TO CHANGE INITIAL PASSWORD

We recommend you to change the device access password set by default (default password is **1234**). The password can contain only four digits from 0 to 9.

To change the password, send SMS message to the device number:

1234,p=XXXX

- 1234 – initial password;
- XXXX – new password.

> **Warning!** If you have not correct password, you will not be able to control the device, and to reset the device, you shall contact the manufacturer service center. Be sure to remember Your password!

9.5. MAIN OPERATION MODES

● G – GPS/GLONASS position determination and reception mode

The device determines its position using navigation satellites and sends SMS message with exact position in the form set by the command setting. *setup=* (see **"Device control commands", "Change of general settings and advanced setup", parameter # 8**). The position is transmitted as digital data, or as hyperlink to different map servers (Google Maps and Yandex.Maps).

Together with the position, additional parameters can be sent: Position date and time, speed of movement, etc.

● S – only GSM-position determination mode

The device sends SMS message including IDs of the nearest GSM base stations, level of signal from the current GSM base station, temperature of the device, battery charge level, and valid operation mode. This mode is used in case when exact position of the tracked target is not required.

● F – SMS-command standby mode

This is the most cost-effective operation mode when the device is

activated in the time interval specified in "T1 Alarm Clock», enables GSM module and waits for SMS message with a command. When received, the command is executed. When no command, then in several minutes the device switches to the sleeping mode for time period set in "T1 Alarm Clock". In this mode, SMS messages will not be transmitted to the user at each activation, but only new commands availability from the user is checked.

NOTE

To avoid blocking the account by the operator for long inactivity, "T2Alarm Clock" cannot be programmed to operate in the F mode!

● **A – audio monitoring mode**

Each time the device is activated according to the settings specified in «T1/T2 AlarmClock», it will call to your number and enable the in-built microphone to listen for the situation. Maximum time for audio monitoring is specified in settings of the command *setup=* (see **"Device control commands", "Change of general settings and advanced setup", parameter # 5**), number of call completion atempts – 3 (with 1 minute interval between attempts). After session completion, the device stays in active state during 5 minutes waiting for SMS message or new call.

The device can operate both in one mode and in their combination.

9.6. DEVICE CONTROL COMMANDS

FindMe device is controlled by sending SMS-commands to the number of SIM-card installed in the device. In the beginning of each SMS

message, there should be a password (containing 4 digits and separating character – "comma"). The letter case (upper or lower) does not matter. Additional characters including whitespace are prohibited. The device does not respond or reply to SMS message without correct password or with non-Latin characters.

If during sleeping mode several SMS messages were sent to FindMe, then only the last-sent message will be considered at the device next activation. When you need to transmit several commands at one time, do this in sequence one-by-one after reception of confirmation of each command execution. After your SMS message reception and command execution, your device stays always active within time period specified in general parameters waiting for possible next command.

When FindMe fails to send SMS message by any reason (no mobile network coverage, insufficient funds on the account, SIM-card blocking by the operator, etc.), the device makes several quick attempts to send this SMS message in a while, and then returns to the specified operation mode and sends the above messages when it becomes possible.

NOTE

All parameters and settings are stored in non-volatile storage and stay unchanged with SIM-card or batteries replacement. When power is OFF, only time count stops.

❶ **When setting up the following modes, enter your four digit password instead of XXXX!**

Interval mode set up

(XXXX,sleep)

According to this SMS command the device switches to the interval operation mode; in this mode, the device is activated according to the schedule set in "T1/T2 Alarm Clock" parameters and when any event occurs (start of movement, application of ACT button, etc.). During the rest time, the device is in sleeping mode.

Continuous mode set up

(XXXX,online)

According to this SMS command, continuous active mode is set, the device is constantly active, and commands are executed in real time mode. When the GPRS monitoring mode is OFF, then resource of off-line operation in continuous mode is 10 days with one battery pack; and when GPRS mode is ON, then up to 48 hours.

SMS message language selection

(XXXX,eng) or (XXXX,rus)

With this command you can change language of SMS messages.

XXXX,eng changes SMS message language for English

XXXX,rus changes SMS meaasage language for Russian

NOTE

The maximum quantity of characters in English is twice greater than in

Russian. So long Russian messages will be charged by mobile communication operator at a higher rate than English ones.

Setting the current date and time according to GPS

(XXXX,GMT=xx)

To set the current date and time, send the following command to the device number:

XXXX,GMT=xx or XXXX,GMT=-xx

Where: xx is your time zone, setting between -11 and +13. For Moscow region, the command is as follows: *XXXX,GMT=04*

Date and time will be determined according to GPS satellites, so the device should be located in the place where the sky is good viewable. When you fail to set time according satellites, use command of the date and time manual set: *time=*.

Manual set of the current day and time

(XXXX,time=ddmmyy,hhxx)

To set or change the current date and time, send the following command to the device number:

XXXX,time=ddmmyyyy,hhxx

● dd (day) within 01…31;
● mm (month) within 01…12;
● yyyy (year) within 2014…2100;
● hh (hour) within 00…23;
● xx (minutes) within 00…59.

The command is verified for correct time and date. Time set moment is the moment when the device reads this SMS message. Default value: ***time=01012012,1200***.

Setting the date, time and "T1/T2 Alarm Clock" modes (XXXX,тn=ddmmyy,hhxx,interval,mode)

To set or change the date and time of one of two "T1/T2 Alarm Clocks", send the following command to the device number:

XXXX,Tn=ddmmyyyy,hhxx,interval,mode

- n – alarm clock number (1 or 2);
- dd (day) – within 01…31;
- mm (month) - 01…12;
- yyyy (year) - 2014…2100;
- hh (hour) - 00…23;
- xx (minutes) - 00…59.

Possible values of the interval (two-digit number + letter):

- between 15 and 59 for M letter (minutes);
- between 01 and 23 for H letter (hours);
- between 01 and 30 for D letter (days);
- F, G, S, A mode or their combinations.

The command is verified for correct time and date. Time set moment is the moment when the device reads this SMS message. When the alarm clock activation time is due, the device switches to active mode. If the device was in sleeping mode, it logs on in the mobile network and starts

to perform the mode procedure specified for this alarm clock. After each activation the alarm clock is self-set for the specified interval.

The alarm clocks are equivalent, but you cannot set F mode for "T2 Alarm Clock". When several operation modes are set, they are executed in their sequence. Initial value of "T1/T2 Alarm Clock" before setting:

● T1=02012012,1200,01D,F;
● T2=02012012,1200,07D,G.

Change of modes only and/or re-activation intervals of "T1/T2 Alarm Clocks"

(XXXX,Tn=mode) (XXXX,Tn=interval) (XXXX,Tn=interval,mode)

To change only the operation mode of one of «T1/T2 Alarm clocks», send the following command to the device number:

XXXX,Tn=mode

● n – alarm clock number (1 or 2);
● mode – mode letter (F, G, S, A) or their combinations.

In this case, date, time and interval of the alarm clock activation are the same.

In the same way you can change only activation interval for each alarm clock using the following command: *XXXX,Tn=interval*. You can also change with one command both activation interval and specified mode as follows: *XXXX,Tn=interval,mode*. The command parameters are the same as above.

**Request for one-time determination of GPS position
(XXXX,g)**

To make a request for one-time determination of GPS position, send the following command to the device number:

XXXX,g

The device sends text message with GPS/GLONASS position in the form set by **parameter # 8** of SMS command *setup=xxx…xxx*.

In accordance with this setting, the position is input or output in one of standard digital formats or as hyperlink including the device location.

The position can be accompanied with a package of additional parameters: date and time of positioning, speed and direction of movement, IDs of the current GSM base station, etc. If the device fails to determine GPS position, SMS message format changes and the device position according to GSM base stations is sent (LBS location method).

**Request for one-time determination of GSM position
(XXXX,s)**

To make a request for one-time determination of GSM position, send the following command to the device number:

XXXX,s

The device will send SMS message with IDs of the current and nearest base GSM stations, temperature of the device, battery charge level, and current operation mode. Also, this message contains GSM-communication quality parameter in dB. The lower the parameter value, the better the recept.

**Request for one-time activation of the audio monitoring mode
(XXXX,a)**

To request for one-time activation of the audio monitoring mode, send the following command to the device number:

XXXX,a

The device replies to the SMS-message by calling you with enabled microphone to listen for the situation. Maximum session time is set in **parameter # 5** of SMS command *setup=xxx*. The tracking beacon makes three attempts to call completely with 1 minute intervals. Upon communication session completion, the device stays in active mode during 5 minutes to wait for SMS-messages or calls.

You can also use the listening mode by calling from your number to the device when the device is active.

**Check of state, settings, and operation modes
(XXXX,?)**

To request for information about state, settings, and operation mode, send the following command to the device number:

XXXX,?

Following this SMS command, the device sends SMS message with complete report about all parameters set. With this command you can also know IMEI number of the device and your current number.

Change of the device name
(XXXX,name=####)

To change the device name, send the following command to its number:

XXXX,name=####

This name will be displayed in the first line instead of the standard "FindMe". The maximum number of effective characters is 15, whitespaces will be deleted. The name can be recorded only with Latin characters.

Change of general settings and advanced setup
(XXXX,setup=parameter 1… parameter 25)

When you need not to change all or any specific parameters, then instead them you can put * (asterisk), e.g., to change accelerometer sensitivity up to maximum value you can send the following command:

1234,setup=***************9*********

Parameter 1 (interval/continuous mode):

0 – interval mode of the device (sleep);

1 – continuous (online).

Factory default is 0.

Parameter 2 (Russian/English SMS):

0 – Russian;

1 – the received SMS messages are in English. Factory default is 0.

Parameter 3 (SMS message waiting time (in minutes)):

From **2 to 9** – waiting time of SMS message after GSM-module registration

in network.

Factory default is 2.

Parameter 4 (delay before going to sleep (in minutes)):

From **2 to 9** – waiting time of SMS message after all modes execution of the alarm clocks or after correct command before going into the sleeping mode.

Factory default is 5.

Parameter 5 (audio monitoring time (in minutes)):

From **0 to 9** – maximum time of audio monitoring. With 0 setting, audio monitoring time is unlimited.

Factory default is 5.

Parameter 6 (time of positioning (in minutes)):

From **1 to 9** – maximum time of GPS positioning. Factory default is 6.

Parameter 7 (use of A-GPS service) – reserved:

0 – A-GPS mode is OFF;

1 – A-GPS mode is ON (this feature will be available in the future software versions).

Parameter 8 (type of SMS message in G mode)

Change of content and type of data in the SMS messages of G mode:

0 – base information + GPS-data in digital format as

 "degrees.fractions of degrees" + hyperling to Yandex.Maps (default setting);

1 – advanced information option about position and state of the device.

NOTE

SMS messages will include 400-450 characters (about 4-8 SMS messages),

this can cause increased funds consumption from personal account of SIM-card installed in the device.

2 – position only in digital format as «degrees.fracture of degrees» without hyperlink to Yandex.Maps;

3 – position in the form of www-link to Yandex.Maps + www-link to www.911.fm with advanced information about the device state and capability of automatic positioning according to GSM base stations in case when satellite positioning fails.

4 – www-link to Yandex.Maps + minimum information about the device state. With this setting, the SMS message is always in English and is charged by the operator as 1 SMS message. When GPS position is impossible to determine, www-link to www.911.fm will be sent and when going to this link the position will be automatically determined as LBS position as well as complete information about device state will be decrypted;

5 – www-link to Google Maps + minimum information about the device state. With this setting, the SMS message is always in English and is charged by the operator as 1 SMS message. When GPS position is impossible to determine, www-link to www.911.fm will be sent and when going to this link the position will be automatically determined as LBS position as well as complete information about device state will be decrypted; Most up-to-date smartphones open such kind of www-link in the built-in app "Maps" to improve viewing comfort and download speed;

6 – digital position as " degrees – minutes – seconds" and

"degrees.fracture of degrees" + LBS additional data + current settings and the device state. Additional parameters such as "altitude above the sea level" and "HDOP and VDOP» are displayed.

7 – reduced information about position in digital form such as "degrees.fracture of degrees" + information on speed, heading, positional accuracy, number of satellites detected and time of positioning, as well as information about battery charge level and sequence number of SMS-message. This can be included in one SMS message when English is selected.

When GPS position is impossible to determine, ID of the nearest GSM base station is output to determine LBS position;

8 – reserved;

9 – short link to www.911.fm with full information about the device state and current position (always included in 1 SMS message).

Parameter 9 (password selection)

From **0 to 9**

Respond to password selection, wher:

0 – no respond;

1–9 – number of sequential SMS messages with wrong password and correct content.

Factory default is 3.

Parameter 10 (battery discharge):

availability of SMS message about battery discharge,

0 – no notification;

1 – available notification – SMS message is sent to the user number.

Factory default is 1.

Parameter 11 (external power supply):

0 – no respond;

1 – alarm when enabling;

2 – alarm when disabling;

3 – alarm when enabling and disabling;

4 – switch to continuous mode when enabling;

5 – switch to continuous mode when disabling + notification when enabling;

6 – switch to continuous mode when enabling + notification when disabling;

7 – switch to continuous mode when enabling + notification when enabling and disabling;

Factory default is 4.

Parameter 12 (external input reserved):

0 – no respond;

1 – alarm at activation (earth fault);

2 – switch to continuous mode at activation;

3 – switch to continuous mode at activation + notification;

Factory default is 1.

Parameter 13 (ACT microbutton operation mode):

0 – no respond;

1 – alarm when pressing;

2 – switch to continuous mode when pressing;

3 – switch to continuous mode when pressing + notification;

Factory default is 1.

Parameter 14 (accelerometer operation mode):

0 – OFF;

1 – alarm when starting movement;

2 – position variation suppression mode during long stop in GPRS-monitoring mode;

3 – alarm when starting movement + position variation suppression mode during long stop in GPRS monitoring mode;

4 – detecting of overturn of guarded target;

5 – impact detection;

6 – recording the accelerations typical for significant accident. Detailed description of operating procedures of this parameter you can read in «How to work with in-built accelerometer". Factory default is 1.

Parameter 15 (device respond to events, recorded by the accelerometer):

1 – sending of the SMS message at recording the event set in parameter 14;

2 – switch to Online mode at recording the event set in parameter 14;

3 – switch to Online mode at recording the event set in parameter 14 + SMS notification about event fix.; Factory default is 1.

Parameter 16 (accelerometer sensitivity adjustment):

From 1 (minimum sensitivity) to 9 (maximum sensitivity).

Factory default is 5.

Parameter 17 (Re-activation time of movement start control):

From **0 to 9**

Time of continuous still state to start recording of movement start only when parameter 14 is 1 or 3 (minutes x 10) Factory default is 0 (5 minutes)

Parameter 18 (alarm event position)

sending the SMS message with position when the event occurs (not notifications) where

0 – none;

1 – same as G request. Factory default is 0.

Parameter 19 (black box for data which ewer not sent):

0 – OFF;

1 – ON (when GPRS–packets are impossible to be sent to the server, position data are saved to flash-memory and transmitted to the server when communication restored).

Factory default is 1.

Parameter 20 (GPRS-packets sending with disabled GPS-module):

0 – GPS-module is ON when sending GPRS-data;

1 – GPS-module is OFF when sending GPRS-data. Factory default is 0.

Parameter 21 (base station search mode)

0 – search of base stations only of the installed SIM-card operator;

1 – search of base stations of all available operators (search time and GSM positioning accuracy increase).

Factory default is 0.

Parameter 22 (LED operation mode):

0 – OFF;

1 – ON only after "ACT" button was pressed;

2 – ON during the whole time when the device is active. Factory default is 1.

Parameters 23-25 – reserved.

Change of the password
(XXXX,p=####)

To change the current password, send the following command to the device number:

XXXX,p=####

On receiving this SMS-command, at subsequent activation the device will change old password (4 digits) with a new one (4 digits). For example: *1234, p=5678*, where 1234 – old password, and 5678 – new password. Be sure to remember the new password, since it can only be reset at the manufacturer service center!

Change of the user number
(XXXX,+71234567890)

To change the user number, send the following command to the device number:

XXXX,+71234567890

When receiving this command, the device will change the current phone number for notification with the new one specified in the command received. New number should be in the international format, starting with a «+» and consist of 10-13 digits.

At the next communication session FindMe will send to both numbers SMS-messages with notification about change of the user number.

Record and change of the phone number for emergency notifications (XXXX,++71234567890)

To record and change phone number for emergency notifications, send the following command to the device number:

XXXX,++71234567890

When receiving this command, the device will repeat to this number SMS-messages about sensor triggering in case of accident or overturn. The number should be in the international format, starting with a «++» and consist of 10-13 digits.

Deleting phone number for emergency notifications (XXXX,++0)

To delete phone number for emergency notifications, send the following command to the device number:

XXXX,++00

When receiving this command, the device deletes phone number for repetition of SMS-messages about the sensor triggering in case of accident or overturn defined by the user.

Balance request and other USSD-requests (XXXX,m=xxxxxxx)

To send the balance request and other USSD-requests, send the following command to the device number:

XXXX,m=xxxxxxx

This command allows request of the information about your account balance of your SIM-card installed in FindMe.

Please, advise on the balance request command format with your mobile operator, which SIM-card is installed in your device.

Standard forms of the request: *100#, *102# or *105#.

Example of SMS: *1234, m=*100#*. At the next communication session the device will send the request to the operator and when receiving an answer, forward it to the user number. If the operator adds advertising text in the balance message, this text will also be transmitted by the device.

If the operator's reply was not received (only 3 attempts are undertaken), SMS messageabout error will be sent.

We recommend you before installing of SIM-card into your device to activate access to your personal area on the mobile operator website.

Statistics reset
(XXXX,stat=0)

The device maintains statistics on the use of batteries, that allows calculation of the remaining life cycle. When receiving this commandFindMe delete the current statistics and starts to maintain the new one. To send the balance request and other USSD-requests, send the following command to the device number:

XXXX,stat=0

9.7. HOW TO USE IN-BUILT ACCELEROMETER

In-built accelerometer is designed to monitor start time and place of the tracked target movement. The user receives SMS message with the correct information. Due to the in-built accelerometer FindMe is not only a tool of stolen property search, but also gives the user an opportunity to take measures in good time.

You can set a function of exact position receipt for the place where events registered by sensor have occurred – **parameter No. 18** in the command **setup =** (see «**Device control commands**», «**Change of general settings and advanced setup**»). Command format for accelerometer operation mode control:

XXXX,mems=x

where **x = 0** sensor is off, no response to any actions

x = 1 sensor detects the fact of tracked target movement start after stop. Continuous movement is registered with duration of not less than 4 seconds.

The stop duration after which the device will send SMS message on start movement can be adjusted from 5 to 90 minutes by the command **setup = parameter No. 17** (see «**Device control commands**», «**Change of general settings and advanced setup**»).

Default value is 5 minutes;

x = 2 enabling position variation supression mode at continious stop in GPRS-monitoring mode due to the error in position determination and satellite singnal rereflaction from high obstacles. It is used only at data

transmission to the monitoring server thruogh GPRS channel;

x = 3 sensor detects the fact of tracked target movement start after continuous stop + suppress position variation at continuous stop in GPRS monitoring mode. These operating procedure includes $x=1 + x=2$. Settings are similar to $x=1$;

x = 4 sensor detects the overturn of the guarded target. In that case overturn is a single-point variation of vertical alignment of the device for the corner exceeding 90 degrees within a short time followed by the new position recording relative to the ground. For accurate recording of this type of exposure when fixing device on the guarded target it is nesessary to place it parallel or perpendicular to the ground level. Sensor orientation intermediate axis positions relative to the ground can cause false responses. This kind of exposure can be used for the fragile goods transportation control;

x = 5 sensor detects impact effect on the guarded object. The device sencitivity to impact detection depends on rigidity of its attachment to the guarded object and the characteristics of the attachment point.

x = 6 sensor detects the accident on the guarded target. An accident is recognized by the sharp slowdown characteristic accelerations for a certain period of time and 1-10G overloads occured at this moment.

Sensitivity to effects is adjusted in **parameter no. 16** of command *setup = 9* grades from 1 to 9 (see **«Device control commands», «Change of general settings and advanced setup»**). The sensitivity default value is 5; 1 – minimum sensitivity, 9 – maximum sensitivity.

After sending SMS-messages about the recorded exposure, the device will be in active mode for 5 minutes, which allows to send an additional SMS-command or call to the device for ambience listening.

Current state of the accelerometer can be obtained from any information SMS-message received from the device.

Line with the accelerometer state in the informative SMS-messages where it appears looks as follows depending on the specific type of detection:

ENG	RUS
Sensor=0 / 1 [off]	Датчик=0 / 1 [выключен]
Sensor=1 / 1 [move]	Датчик=1 / 1 [движение]
Sensor=2 / 1 [keep]	Датчик=2 / 1 [удержание]
Sensor=3 / 1 [move+k]	Датчик=3 / 1 [движ+удерж]
Sensor=4 / 1 [turn]	Датчик=4 / 1 [переворот]
Sensor=5 / 1 [shock]	Датчик=5 / 1 [удар]
Sensor=6 / 1 [crash]	Датчик=6 / 1 [авария]

The second digit after the «/» character is a kind of response to the action. Set by **parameter 15** of command *setup=* (see **"Device control commands", "Change of general settings and advanced setup"**).

9.8. GPRS-MONITORING MODE

In this mode, the device steadily monitors the tracked target movements and transmits information via GPRS channel to the indicated monitoring server. You can see all movements of the target from any PC connected

to Internet. To do this, you should log-on at the monitoring server selected, enter your personal account, add new device indicating as unique number your device IMEI which you can know by sending SMS command *(XXXX,?)* to your device. Then you should set up the device to transmit data via GPRS to the monitoring server selected using the following commands:

XXXX,i1= sets APN access point of GPRS service

XXXX,i2= sets IP and port of the monitoring server selected

XXXX,i3= enables/disables and sets interval of packet sending via GPRS

Enables/disables data transmission mode via GPRS channel (XXXX,i3=xxx)

To enable data transmission mode via GPRS channel, send the following command to the device number:

XXXX,i3=xxx

After reception of this command, FindMe will transmit informative packets to the monitoring server with the specified frequency.

xxx - interval of packet sending to the server (between 010 and 240 seconds).

For example, *XXXX,i3=030* means that GPRS-packets sending mode is enabled with interval once per 30 seconds.

To disable GPRS data transmission mode, send to the device number the following command:

XXXX,i3=000

To improve quality of the target movement tracks received at the server, the device generates and sends extra packets while turning movements. When GPRS data transmission is enabled in interval mode, then during each activation one data packet will be transmitted to the server.

Set up of APN access point for your operator
(XXXX,i1=internet.mts.ru,login,pass)

You can find this setting at help desk of the operator of SIM-card used in the device. login, pass are optional parameters.

For example, *1234,i1=internet.mts.ru,mtc,mtc*

The example above includes setting for MTS operator.

For MTS: *internet.mts.ru,mtc,mtc (default setting)*

For Megafon: *internet,gdata,gdata*

For Beeline: *internet.beeline.ru,beeline,beeline*

Set-up of IP-address and port or DNS-name and port of the monitoring server (XXXX,i2=xx.xxx.xx.xxx.xxxx) or (XXXX,i2=yyyy:zzzz)

To set up IP-address and port of the monitoring server, send the following command to the device number:

XXXX,i2=xx.xxx.xx.xxx.xxxx

You can get settings at representatives of the server in use. As separating characters, SMS command uses points.

For example, *1234,i2=46.51.172.140.7001*, where 1234 – password

to control the device, 46.51.172.140 – IP-address of the monitoring server, 7001 – port number of the monitoring server.

To set up DNS-name and port of the monitoring server, send the following command to the device number:

XXXX,i2=yyyy:zzzz

You can get settings at representatives of the server in use. As separating characters, SMS command uses double point.

For example: *1234,i2=example.com:7001*, wher 1234 – password to control the device, example.com DNS-name, 7001 – port number of the monitoring server.

Set up of storage operation mode of black box failed packets (XXXX,box=x)

This command controls operation modes of black box which records FindMe positions in case when they could not be sent to the selected monitoring server under any reasons.

To set up one of the storage operation modes of black box failed packets, send one of the following commands to the device number:

● *1234,box=0*: accumulation of packets in the black box is OFF, black box storage is empty;

● *1234,box=1*: accumulation of packets in the black box is ON;

● *1234,box=2*: emptying of the black box without change its operation mode;

● *1234,box?*: check of the black box operation mode.

In all SMS replies to these settings there should be indicated status and

occupancy of non-volatile flash-memory of the device.

NOTE

Total storage capacity of the black box is 98,000 packets; when storage is full, the new packets supersede the oldest ones.

When communication with the server is restored, the device automatically starts transmission in the background.

Notes to GPRS mode:

● The GPRS mode is characterized by high power consumption, so it is advisable to use it with an external power supply, otherwise the capacity of the new batteries will be enough for no more than 24-48 hours of continuous operation.

● To suppress the effect of position variation during long stops, you can activate in the command: ***setup = parameter #14*** (see **«Device control com-mands», «Change of general settings and advanced setup»**); in which case the device will transmit actual positions to the monitoring server only when the in-built accelerometer of the device detects any movement. At stops the last position determined before stop will be provided.

● This device is capable to enable the continuous monitoring mode only when external power supply is available / movement is detected / signal from external input is available. All these options of modes switching according to events are described in command: ***setup=*** (see **«Device control**

commands», «Change of general settings and advanced setup»).

● Operator's SIM-card in use shall have GPRS service connected

● GPRS traffic can be rather expensive in international roaming, so we recommend you to inquire your GSM operator for rates in advance.

● When GPRS mode is active, you can control the device via SMS commands and receive the reply SMS messages from the device.

● All GPRS settings are stored when power is OFF.

10. HELPFUL INFORMATION

Table 10.1 List of SMS commands to control the device

with pre-installed SIM-card

SMS command text	Command action	Reply SMS message	Note
Blank SMS message	Enabling the tracking mode	The tracking mode is enabled. Scheduled time of FindMe Fm2 contact is 29.01.2014 19:16	Only when in personal area at www.911.fm no more than one device is logged on.
Device name	Enabling the tracking mode	The tracking mode is enabled. Scheduled time of FindMe Fm2 contact is 29.01.2014 19:16	This does not depend on number of logged on devices in personal area at www.911.fm
Off	Disabling the tracking mode	The tracking mode of FindMe Fm2 is disabled. Battery charge is 97%.	Only when in personal area at www.911.fm no more than one device is logged on.
Off Device name	Disabling the tracking mode	The tracking mode of FindMe Fm2 is disabled. Battery charge is 97%.	This does not depend on number of logged on devices in personal area at www.911.fm
S	Requesting information about all devices logged on in personal area at www.911.fm	FindMe Fm2: battery charge: 97%, last connection: 29.01.2014 19:01, tracking mode	

Table 10.2 List of SMS commands to control the device

with user SIM-card

XXXX – valid password to control the device

SMS command text	Command action	Reply SMS message	Note
XXXX, +71234567890	Record or change of the user number 10-13 digits	1: +71234567890	1234 – default password +71234567890 – new number to control the device
XXXX,time= 02012014,1300	Setting the current date and time	02-01-2014 13:00:00	The following time is set: 13 hours 00 minutes 2nd January, 2014
XXXX,t1=0201 2012,1320,30M,F	Setting the time of alarm clock in minutes. 15-59	T1: 02-01-2014 13:20, 30M,F	The first alarm clock is set for 13:20 with 30 minutes interval and F mode
XXXX,t2=02012012, 1440,23H,SG F	Setting the time of alarm clock in hours. 01–23	T2: 02-01-2014 14:40, 23H,SG	The second alarm clock is set for 14:40 with 23 hours interval and SG mode
XXXX,t2=02012014, 1550,07D,G	Setting the time of alarm clock in days. 01–30	T2: 02-01-2014 14:40, 07D,G	The second alarm clock is set for 15:50:00 with 7 days interval and G mode
XXXX,sleep	Periodic operation mode	Mode: sleep	The device wakes up only when the alarm clock is activated.

Table 10.2 continued

SMS command text	Command action	Reply SMS message	Note
XXXX,online	Continuous operation	Mode: online	The device will not go to sleep
XXXX,t1=01h **XXXX,t1=G** **XXXX,t1=01h,G**	Change of re-activation time and/or operation mode and "T1/T2 Alarm Clock"	T1: 01-01-2014 13:00,01H,G T2: 02-01-2014 12:00,07D,G	This is applied when there is no requirement to set exact time for alarm clocks
XXXX,p=5678	Change of access password	PASS: 5678	5678 – new password
XXXX,setup= **1005511132121** **222316311000**	Advanced setting, change of additional parameters	SETUP=1005511 1321212223163 11000	If any value is outside permissible limits, no parameters change. Parameters which require no change can be replaced with * character.
XXXX,?	Check of state and operation mode of the beacon	1: +71234567890 IMEI:808080808080808 SETUP=1005511123... I1=internet.beeline.ru I2=195.24.68.72.7774 I3=000 T1: 02-01-2012 12:00,01D,S T2: 02-01-2012 12:00,07D,G Bat.: 5.85 V (100%) T:+25 °C Power: OFF Sensor=1/1 (movement) Mode: sleep sms # 3	Informative message with full set of parameters except value of the specified password

Table 10.2 continued

SMS command text	Command action	Reply SMS message	Note
XXXX,g	SMS message with GPS and GSM data sent on one time basis	Command is received. Wait for reply within several minutes.	Format of coordinates: N55.87871 E037.60307 (in accordance with coordinate output)
XXXX,a	Completion of calls to the user number and microphone activation	Capp to the user number	Time of audio monitoring is set in settings including repeatability
XXXX, m=xxxxxx	Request for account balance and other USSD requests, xxxxxx – request code	Your balance: 123.45 rub	Balance: MTS: *100# Beeline: *102# Megafon: *100# Tele2: *105#
XXXX,i3=030	Setup of package sending interval to the server via GPRS	I3= 030	Between 010 and 240 sec. i3=000 deactivation of GPRS-mode
XXXX,box=x	Control of records of packages which are not sent to black box	Black box: enabled. FLASH: 98304/0/0	Check of the state
XXXX,box?	Request for black box state	Black box: enabled.	Check of black box fill

Table 10.2 continued

SMS command text	Command action	Reply SMS message	Note
XXXX,i1=internet. beeline.ru	Set up of APN-point for your operator of SIM-card installed in the device	I1=internet.beeline.ru	Ask the device SIM-card operator for this parameter value
XXXX,i2=176.9. 114. 139.20102	Set up of IP and port of the monitoring server	i2=176.9.114.139.20102	All parameters are recorded through points. Initially this is set at 911.fm monitoring server
XXXX,mems=x	Enabling monitoring mode of target movement start, alarm when movement starts	Sensor=x/1	Reactivation timer is set in settings
XXXX,stat=0	Reset of the device inner statistics	Ok	

Table 10.3 LED indications

LED status	Description
OFF	The device is in sleeping mode
Flash duration: 166 ms, pause duration: 166 ms.	GPS is enabled, position coordinates search
Flash duration: 500 ms, pause duration: 500 ms.	GSM is enabled, base stations search, data transmission to the user
Flash duration: 166 ms, pause duration: 834 ms.	Waiting for user SMS command

Table 10.4 Troubleshooting

Problem description	Probable cause	Remedies
FindMe does not switch to sleeping mode	The beacon has no time to get to sleep as commands are sent to it or switching to continuous event mode is active	Do not send commands to the beacon for some time. Check settings of SETUP= command.
The beacon does not respond to SMS commands sent to it	1. Batteries are worked out. 2. Incorrect password in the SMS command. 3. SMS command was sent with Russian characters in text or has invalid format. 4. Activation time is not yet. 5. The beacon is outside the mobile operator serving area. 6. Money on SIM-card account ran out, outgoing calls are blocked. 7. The user number is not recorded. 8. Temperature is below –35 °C. 9. The beacon failure.	1. Check battery voltage; if less than 2.70 V, replace for new ones. 2. Specify correct password in the message. 3. Send command in Latin characters or in correct format. 4. Wait for activation time. 5. Wait for device logging on in the mobile network. 6. Top up the account. 7. Send the user number record command. 8. Wait for temperature increase. 9. Contact the service center for repair.
The beacon does not determine GPS position	1. The device is screened with metal objects or is out of view of the sky 2. Strong GPS interference source is near the device. 3. The antenna of the device is not pointed towards the sky.	1. Shift the device to the other place free from screening. 2. Try to get GPS coordinates in other place, 3. Point the device in good direction.

Table 10.4 continued

Problem description	Probable cause	Remedies
Batteries discharge very quickly	1. Online continuous active mode is set. 2. GPRS mode is enabled. 3. The beacon transmits unreliable information about batteries' state. 4. Multiple use of listening mode.	1. Switch the device into economy sleep mode. 2. To disable GPRS mode or use external power. 3. Charge level indications depend heavily on temperature. At minus temperatures, indications of residual battery capacity are unreliable. Battery charge level decrease is not linear. 4. Do not use audio monitoring
GPS position submitted are inaccurate by 50-500 meters.	The device has found only 3 navigation satellites or pick up echo reflected from high buildings.	Shift the device to the place with more stable reception of GPS signals or point it towards the sky.

11. CONTACTS AND SUPPORT

You can get advice or technical support when contacting as follows:

Internet-portal:	**www.911.fm**
Free call in Russia:	**8-800-100-28-77**
Phone in St.Petersburg:	**+7-812-318-18-80**
E-mail:	**911@911.fm**

Our engineers and technicians are always ready to answer your questions, help to install, setup, and remedy problem situations while operating iRZ equipment.