**Thank you for choosing
StarLine M17 GLONASS/GPS tracker
and wish you successful and safe trips!**

Edition No.4

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# Introduction

## Purpose and Capacities

StarLine M17 GLONASS/GPS is a midget searching tracker, designed to determine exact coordinates of the object, whose location you need to control. It can be placed in your car, motorcycle or boat, it can accompany valuable cargo, container or luggage, and it can also be put into a child's schoolbag or an elder person's pocket. The object's coordinates are transmitted to your phone in the form of SMS-messages with text or web-link to a fragment of the map to view it on the phone screen.

You can observe all the movements of the controlled object in the real-time mode via the computer or the phone, connected to the Internet. The tracker continuously tracks the location of the object and transmits the information to the monitoring server www.starline-online.ru.

The built-in microphone allows you listen to surroundings by phone. It can facilitate significantly the search of a stolen car or a stolen cargo by narrowing the search area upon detection of the response to acoustic signals (for example, car horn, alarm, knock at doors of closed garages etc.).

The tracker is equipped with a built-in movement sensor, by means of which it can determine the start of the movement or overturn of the protected object and inform the owner about these events with the SMS message.

Using the universal secondary channel, you can control the external devices (emergency blocking of the engine, activation of the automatic start, audio alarm, starting preheater etc.). In the tracker there is a possibility to transmit the SMS message about the alert to the owner, at the incoming of the alert message via the external alarm input, as well as at the disconnection of the external power supply, when the tracker transits to the operation automatically with the internal batteries.

The tracker controls the state of its batteries and balance on the SIM card automatically. If the batteries' life or the account balance comes to the end, it will send the SMS message with the warning about the need to replace the batteries or to recharge the account.

# Operation Principle

The tracker can operate in two basic modes: normal and alert.

## Normal Mode

In the normal mode, the tracker spends the most of its time in the sleeping state. When the time of the next session comes, it wakes up, performs commands transmitted to it with the SMS and sends its coordinates to the owner. The interval between communication sessions may be set from 1 minute up to 30 days.

**In the normal mode:**
- The saving of the charge of the batteries is provided.
- The installation security is provided: when it is powered from the batteries, no external connections are needed.

## Alert Mode

In the alert mode, the tracker is always on line. This allows you to control it at any time and receive the information about its location immediately.

**In the alert mode:**
- You can control external devices through the external output.
- The capacity of new batteries will last only for 1-2 weeks in this mode, it is recommended to connect the tracker to an external power supply unit.

## Coordinate Determination

The tracker determines its location by satellites of the GLONASS and GPS navigation systems and sends the SMS message with the coordinates (in degrees of latitude and longitude, for example, **N59.96338 E30.35051**) to your phone. Besides, the speed, which the object moves with, and the direction of its movement are indicated in the message. The data about the batteries' life, temperature, current balance on the SIM card and operation mode can be included to the message as additional information.

In the absence of the GLONASS/GPS signal (in garages, underground parking, container or when the GLONASS/GPS signal is intentionally blocked), identifiers of 4 basic GSM stations, which the connection is established at the moment with, are sent. This information will help to determine the approximate location of the tracker. You can establish the correspondence between identifiers of basic GSM stations and actual coordinates at the www.mayak.mobi/lbs.

## Monitoring

When using the monitoring function, the tracker uninterruptedly tracks movements of the controlled object and sends the information by GPRS technology to the monitoring server www.starline-online.ru in the Internet. You can observe all movements of the object online from any computer or phone, connected to the Internet. The feature of the monitoring is the increased power consumption within the transmission of data to the server, so when using this function, it is recommended to connect the tracker to an external power supply.

# Control Method

The configuration and control of the tracker is carried out at the website [www.mayak.mobi](www.mayak.mobi) or by using SMS messages from a mobile phone. The messages are sent to the number of the SIM card installed in the tracker. You can send commands to the tracker from your phone or another phone – in order to do this, you just have to indicate the correct password in the message. This will allow you to keep the ability to control the tracker if you lose the phone or change the number.

# Delivery Package

1. StarLine M17 **GLONASS/GPS**  tracker
2. External supply cable
3. CR123A lithium battery (2 pcs)*
4. SIM card*
5. Commands check list
6. Tariff description
7. Warranty card
8. Quick Start Guide
9. Operation manual

*\* installed in the  tracker*

# Specification

| Parameter | Value |
|---|---|
| Communication standard | GSM 900/1800 MHz |
| Embodiment of GSM and GPS antennas | built-in |
| Model of the GPS/GLONASS receiver | MTK3333 |
| Accuracy of calculation of the GPS/GLONASS coordinates | |
| • typically | from 5 to 10 meters |
| • in conditions of the weak-signal reception | up to 500 meters |
| Accuracy of location determination by the LBS GSM technology | |
| • in the town | from 100 to 800 meters |
| • out of the town | from 0.5 to 30 km |
| Capacity of the CR123A plug-in lithium batteries | 2 x 1.5 A-h |
| Service life of the battery pack | up to 2 years |
| Maximum load current | 200 mA |
| Band of voltages of the external power supply | from 8 to 33 V |
| Category temperature range | from -40 to +60°C |
| Overall dimensions | 85 x 52 x 23 mm |
| Weight with two batteries | not more than 110 g |

# Quick Configuration

## Tracker switching

The tracker is supplied with the batteries installed inside and SIM card requiring no activation. The subscriber number and tariff parameters are indicated in the instruction sheet and description, which are included in the tracker package.

In order to switch on the tracker, press the button on the body. The start of operation is indicated with one long flash of the light-emitting diode built in the button. The single short flashes will follow after the long flash. If you watch double flashes or another indication, see the 'Indication of the control light-emitting diode' on Page 92.

**ATTENTION!** *Once switched on, the tracker will operate in the normal mode (see on Page 24). If no command comes during 20 minutes, the tracker will transit to the sleeping state. The indicative LED will stop lighting. In order to reactivate it, press the button on the body.*

*Connect the tracker to the on-board power supply of the car. Connect the red wire of the tracker to '+' of the 12/24V power supply and black wire to the 'ground'. It is allowed to connect the tracker to the external power supply simultaneously with the installed batteries. In case of disconnection of the external power supply, the tracker will automatically switch on to the batteries' power (more details about connecting to the external power supply are on Page 69).*

*Execute the quick configuration of the tracker, using the telematics service http://mayak.mobi or using the commands given below.*

# Monitoring

Use this Setting, when connecting the tracker to the external power supply to transmit the data about the location to the monitoring server www.starline-online.ru.

**To set the owner's number,** send the SMS message from your phone to the tracker SIM card number:

Telephone          Tracketrac

1234+          Owner's number     : +7XXXXXXXXXX

The tracker will send the response message with the confirmation of recording your number as the owner's number.
For example: *Owner's number +79115554433*

**To set the internal clock**, send the SMS message from your phone to the tracker SIM card number, enter the value corresponding to your time zone instead +4 (see on Page 93):

Telephone          Tracker

1234T+4;T          Date and time     : 16:20 15.03.2012 (+4)

The tracker will send the response message with the confirmation of settings the internal clock.
For example: *Date and time: 16:20 15:03.2012 (+4)*

**To record the phone number of the tracker,** send the SMS message with the SIM card telephone number, installed in the tracker (to enter the message, use the Latin letters). Indicate the number of the tracker SIM card instead of +7XXXXXXXXXX:

**Telephone**

**Tracker**

**1234 MAYAKNUM +7XXXXXXXXXX**

**Tracker number:** +7XXXXXXXXXX

The tracker will send the response message with the confirmation of recording the tracker phone number.
For example: tracker*'s number +79112345678*

Register the tracker on the monitoring server www.starline-online.ru. The stepwise instruction is at the www.starline-online.ru.

**To get the IMEI identifier** (it is necessary for the registration on the monitoring server), send the SMS message from your phone to the tracker SIM card number:

**Telephone**

**Tracker**

**1234INFO**

SN: M1500141021531
FW ver 1.3.7687
HW ver 8.00
**IMEI 355094042836407**
BAT 3.000V (###), TEMP 25C

The tracker will send the response message containing the IMEI identifier.

**To activate the monitoring,** send the SMS message from your phone to the tracker SIM card number:

Telephone

**1234MON+**

Tracker

Activation of Monitoring

Tracker

Monitoring is activated
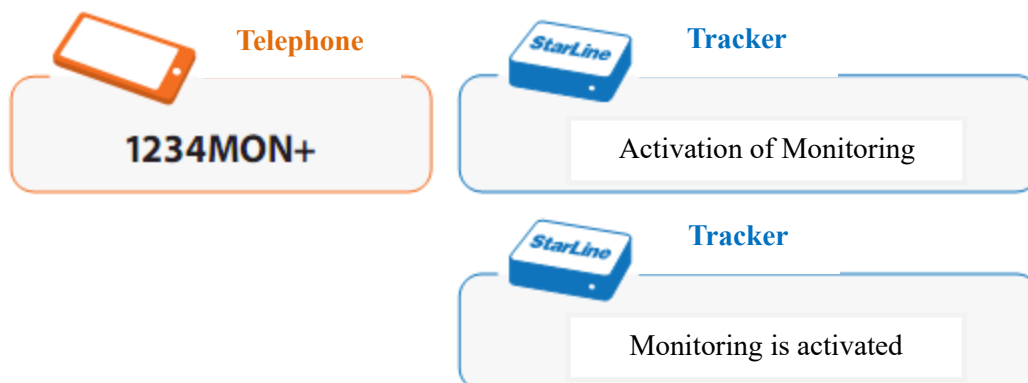
The tracker will send two response messages with the confirmation of the information about the monitoring activation.

**To change the access password,** send the SMS message from your phone to the tracker SIM card number; enter your new password instead of the figures of 5678:

Telephone

**1234P5678**

Tracker
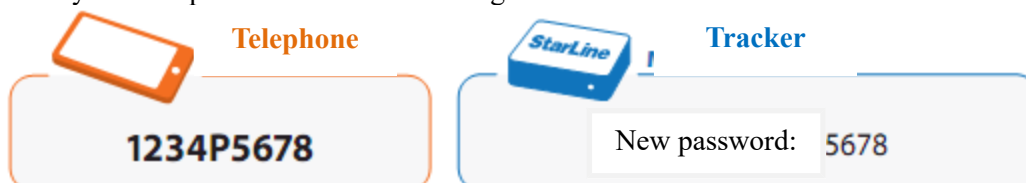
New password:   5678

The tracker will send the response message with the confirmation of recording your new password. For example: *New password: 5678*

Remember and write down your new password, keep the password secret from outsiders.

The indication of the LED will stop in 20 minutes after sending the last command. The tracker will remain active and continue transmitting the data about its location to the monitoring server www.starline-online.ru till the power-off.

# External Power Supply and/or External Input Monitoring

Use these settings for the automatic monitoring activation, when connecting the external power supply (upon appearance of the signal on the external input). The data about the location will be transmitted to the monitoring server www.starline-online.ru.

**To set the owner's number,** send the SMS message from your phone to the tracker SIM card number:

**Telephone**          **TrackerTra**

1234+          Owner's number          : +7XXXXXXXXXX

The tracker will send the response message with the confirmation of recording your number as the owner's number.
For example: *Owner's number +79115554433*

**To set the internal clock**, send the SMS message from your phone to the tracker SIM card number  enter the value corresponding to your time zone instead +4 (see on Page 93):

**Telephone**          **Tracker**

1234T+4;T          Date and time          : 16:20 15.03.2012 (+4)

The tracker will send the response message with the confirmation of settings the internal clock.
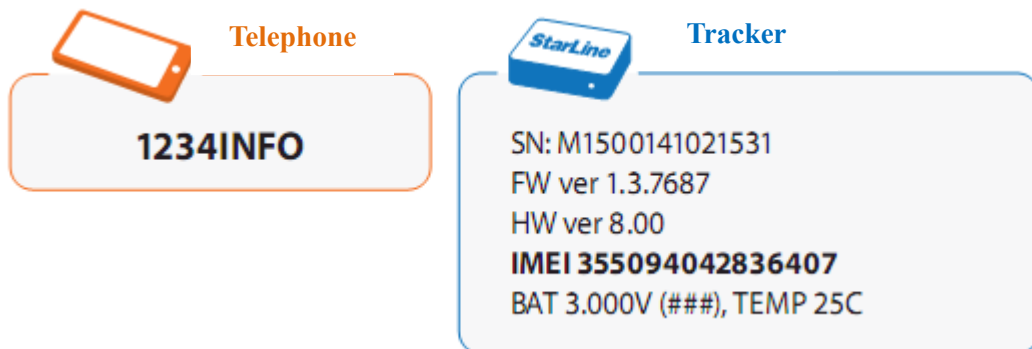For example: *Date and time: 16:20 15:03.2012 (+4)*

**To record the tracker phone number,** send the SMS message with the SIM card phone number, installed in the tracker (to enter the message, use the Latin letters). Indicate the number of the tracker SIM card instead of +7XXXXXXXXXX:

Telephone

*StarLine* Tracker

**1234 MAYAKNUM +7XXXXXXXXXX**

Tracker**Tracker**'s number:

The tracker will send the response message with the confirmation of recording the tracker phone number. For example: tracker*'s number +79112345678*

Register the tracker on the monitoring server www.starline-online.ru. The stepwise instruction is at the www.starline-online.ru.

**To get the IMEI identifier** (it is necessary for the registration on the monitoring server), send the SMS message from your phone to the number of the tracker SIM card:

Telephone

*StarLine* Tracker

**1234INFO**

SN: M1500141021531
FW ver 1.3.7687
HW ver 8.00
IMEI 355094042836407
BAT 3.000V (###), TEMP 25C

The tracker will send the response message containing the IMEI identifier.

**To activate the monitoring on the external power supply** (if necessary), send the SMS message from your phone to the number of the tracker SIM card. If the LED stopped lighting by the time of enabling the monitoring, press the button on the body before sending the SMS:

Telephone

*StarLine* Tracker

1234 POWER --M+

External power supply: monitoring; the tracker is permanently active
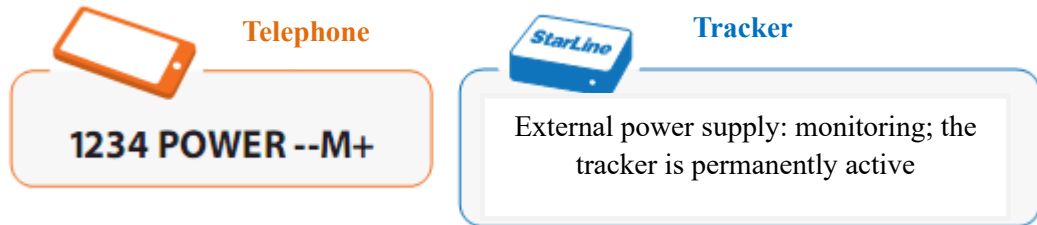
The tracker will send the response message with the confirmation of the information about the monitoring activation on the external power supply.

**To activate the monitoring on the external input** (if necessary), send the SMS message with the SIM card phone number. If the LED stopped lighting by the time of enabling the monitoring, press the button on the body before sending the SMS:

Telephone

*StarLine* Tracker

1234 IN A M+

External input: monitoring; the tracker**Tracker** is permanently active
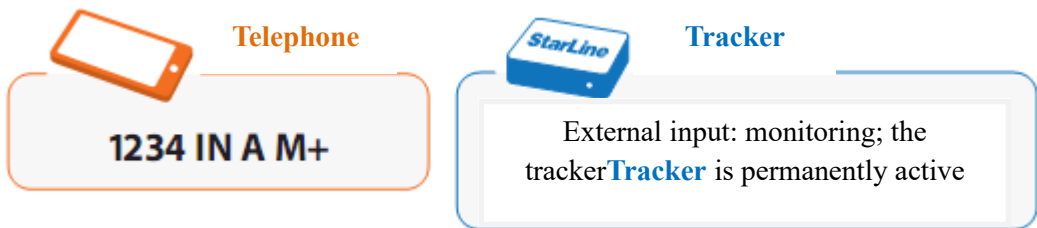
The tracker will send the response message with the confirmation of the information about the monitoring activation on the external input.

**To change the access password,** send the SMS message from your phone to the tracker SIM card number; enter your new password instead of the figures of 5678:



The tracker will send the response message with the confirmation of recording your new password. For example: *New password: 5678*

Remember and write down your new password, keep the password secret from outsiders.

In 20 minutes after sending the last command, the tracker will remain active and can receive commands. Whereupon the indication of the LED will stop and the tracker will transit to the sleeping state.
When connecting the external power supply (upon appearance of the signal on the external input), the tracker will wake up and start transmitting the data about the location to the monitoring server www.starline-online.ru. The data transmission to the server will stop upon disconnecting the external power supply (absence of the signal on the external input).

# Getting the Coordinates when Convenient for You

Use these settings, when connecting the tracker to the external power supply to get the coordinates by SMS (**N59.96338 E30.35051**) at the time convenient for you and with the required periodicity.

**To set the owner's number,** send the SMS message from your phone to the tracker SIM card number:

**Telephone**    **TrackerTra**

1234+    Owner's number : +7XXXXXXXXXX

The tracker will send the response message with the confirmation of recording your number as the owner's number.
For example: *Owner's number +79115554433*

**To set the internal clock**, send the SMS message from your phone to the tracker SIM card number, enter the value corresponding to your time zone instead +4 (see on Page 93):

**Telephone**    **Tracker**

1234T+4;T    Date and time : 16:20 15.03.2012 (+4)

The tracker will send the response message with the confirmation of settings the internal clock.
For example: *Date and time: 16:20 15:03.2012 (+4)*

**To set the time and date of the first coordinates sending,** send the SMS message from your phone to the tracker SIM card number:

Telephone

1234 B2 22.03.2012 20:00

StarLine   TrackerTra

Activation 22.03.2012 20:00 (+4)
You will receive an SMS with coordinates in the form of the text to the number of 79112345678.
Watch dog timer 1: 1.01.2012 12:00 (+4), Period 1D; Waiting for commands.
Watch dog timer 2: **15.03.2012 20:00** (+4), Period 7D, text.

The tracker will send the response message with the confirmation of recording the time and date of the first coordinates sending.

**To set the required interval of coordinates receiving,** send the SMS message from your phone to the tracker SIM card number. Enter the required interval of sending the messages instead of the figure of 10:

Telephone

1234B2104

StarLine   Tracker

Activation **16.03.2012 06:00** (+4)
You will receive SMS with coordinates in the form of the text to the number of 79112345678.
Watch dog timer 1: 1.01.2012 12:00 (+4), Period 1D; Waiting for commands.
Watch dog timer 2: **15.03.2012 20:00** (+4), **Period 10H**, text.
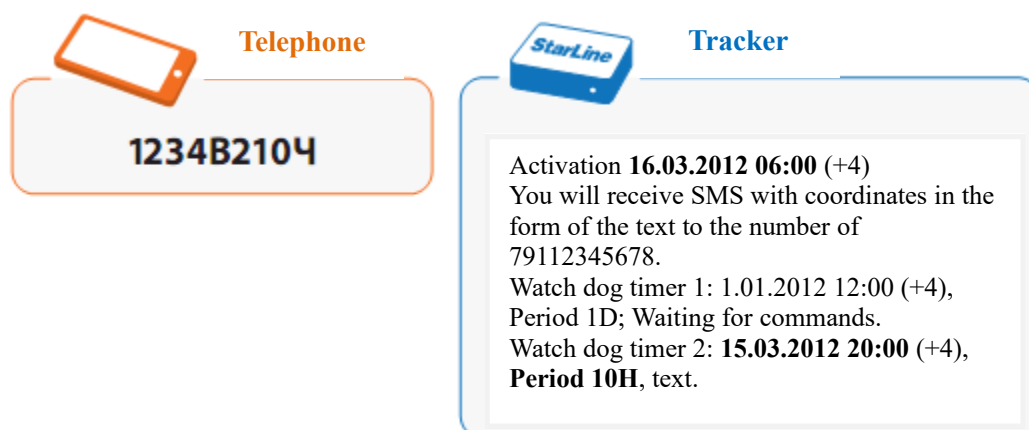
The tracker will send the response message with the confirmation of recording the interval of the coordinates sending.

**To allow the transition of the tracker to the sleeping state in the presence of the external power supply,** send the SMS message from your phone to the tracker SIM card number:
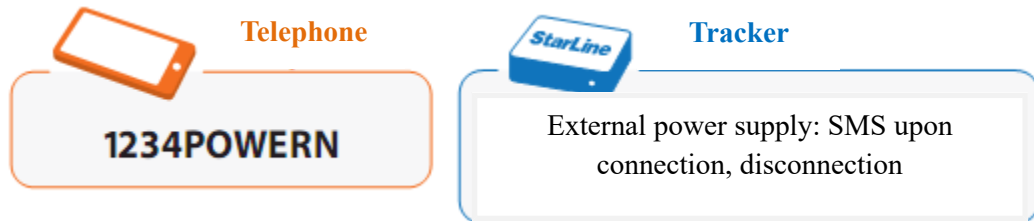


The tracker will send the response message with the confirmation of receiving the information.

**To change the access password,** send the SMS message from your phone to the tracker SIM card number; enter your new password instead of the figures of 5678:



The tracker will send the response message with the confirmation of recording your new password.
For example: *New password: 5678*

Remember and write down your new password, keep the password secret from outsiders.

In 20 minutes after sending the last command, the tracker will remain active and can receive commands. Whereupon the indication of the LED will stop and the tracker will transit to the sleeping state. When the indicated time and date come, the tracker will wake up, send the data to the owner's phone number and execute SMS commands (if they were sent).

# Tracker Control

## Control Commands

*For the telematics control of the tracker on your computer or mobile phone via the Internet, use the special service http://mayak.mobi.*

The control of the tracker is carried out via the Internet or by sending SMS messages with commands to the number of the SIM card, installed in the tracker. The password (4 digits) must stand in the beginning of each SMS message.

**SMS command format**

| **\*\*\*\*** | **command** |
|---|---|

where \*\*\*\* - the current access password (4 digits)

If you need to send several commands to the tracker at the same time, it is recommended to do this in consecutive order, one by one, waiting until the response SMS message comes, which confirms the execution of the command. If necessary, you can specify several commands in the same SMS message, dividing them with the ';' symbol (semicolon). In this case, you have to wait the confirmation of execution of all commands after sending the message.

| **\*\*\*\*** | **command; command; command;** |
|---|---|

⚠️ **ATTENTION!** *Some commands can be sent from the owner's phone without password (depending on settings made, see Page 37 and table of SMS commands at Page 89). In other cases, when sending the SMS message without password or with an incorrect password to the owner's phone, the message about the entry of the incorrect password will come.*
*If the tracker receives SMS with the correct password, but with an incorrect format of parameters, it will send the response message about the entry of the incorrect command.*

In the end of each message coming from the tracker, its sequence number shall be indicated, beginning from the first message sent upon the switching-on.

**TrackerTra**

Tracker is switched on by pressing the SMS#1 button

If there is one or several missed SMS messages among the messages received from the tracker, the tracker is likely to execute commands that come from another phone. In this case, it is recommended to change the access password to the tracker as soon as possible.

The counter of the SMS messages will be reset upon restoring the factory settings and changing the batteries (disconnecting the external power supply).

# Owner's Number settings

The SMS command for recording the owner's number should be sent first, when switching on the tracker for the first time. This command sets the number, which the tracker will send the SMS messages to. The owner's number can be changed to a new one afterwards (it is set in the new SMS command).

To set the owner's number automatically, send the SMS command of the following format from your phone to the SIM card number, installed in the tracker:

| **** | + |
|------|---|

where **** - the current access password

The tracker will send the response message with the confirmation of recording your number as the owner's number.

To set the owner's number from another phone, you should send the SMS command of the following format to the tracker number:

| **** | **[Owner's number]** |
|------|----------------------|

where **** - the current access password

**[Owner's number]** – The owner's phone number (it should be indicated in the international format, begin from the '+' sign and consist of 10-13 digits).

When changing the owner's number the tracker will send SMS messages confirming the change to both numbers (old and new numbers), as well as to the number, which the SMS command was sent from.

**Telephone**

1234+

**TrackerTra**

Owner's phone: +79112345678

**or**
**Telephone**

1234+79112345678

# Operation Mode settings

⚠️ **ATTENTION!** *When connecting the tracker to the external power supply, its state shall be determined by the current operation mode and settings of the* **POWER** *command at Page 69.*

## Normal Mode

In the normal (energy saving) mode, the tracker spends most of the time in the sleeping state. When the time of the next actuation of the watch dog timer comes, the tracker transits to the active state (wakes up), executes the SMS commands received during the doze and sends its coordinates to the owner. The duration of the communication session continues within 5 minutes. Each SMS message, received by the tracker in the active state, prolongs the tracker operation by 5 minutes.

To enable the normal mode, send any of the following two SMS messages to the tracker number:

| **** | - (minus) |
|---|---|
| | N |
| | NORM |
| | NORMAL |

| **** | H (rus) |
|---|---|
| | HOPM (rus) |
| | НОРМАЛЬНЫЙ |

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)

**Telephone**

**1234NORMAL**

*StarLine* **TrackerTra**

The NORMAL MODE has been set

**or**
**Telephone**

**1234НОРМАЛЬНЫЙ**
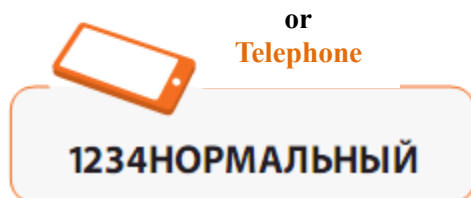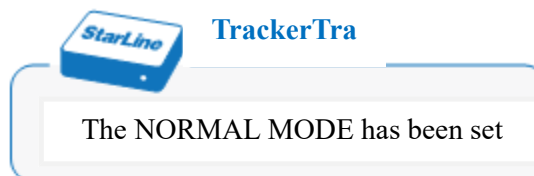
**ATTENTION!** *If the tracker is in the normal mode, it will be able to execute incoming commands only after the next awakening. The **normal mode** is set in the initial (factory) settings of the tracker.*

## Alert Mode

The tracker is active all the time in the alert mode and ready to accept and execute incoming commands at any time.

To activate the alert mode, send any of the following SMS messages to the tracker number:

| **\*\*\*\*** | ! (exclamation point) |
| | **A** (eng) |
| | **ALERT** |

| **\*\*\*\*** | **A** (rus) |
| | **ТРЕВОГА** |

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)

**Telephone**

**1234ALERT**

**TrackerTra**

The ALERT MODE has been set
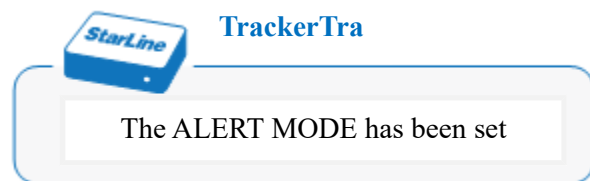
**ATTENTION!** *The tracker is ready to receive and execute an incoming command at any time in the alert mode. But the service life of new batteries in this mode will last approximately 1-2 weeks of the uninterrupted operation.*

# Coordinates Determination Query

**ATTENTION!** *SMS message sending doesn't take out the tracker from the sleeping state. This means the tracker will be able to execute the command of the query of coordinates only after the next awakening in the normal mode.*

## Getting the Standard Format Coordinates

To get the GLONASS/GPS coordinates of the tracker, send a message with the password to its phone number from the owner's phone or from another phone.

**** (Access password)

Having received this command, the tracker will send the response SMS message with the GLONASS/GPS coordinates, speed and direction of the movement. The format and code of the message will be determined by the relevant settings (the text message comes in Russian by default).

**Telephone**

1234

**StarLine**

**TrackerTracker**

Movement: 54 km/h -> SE
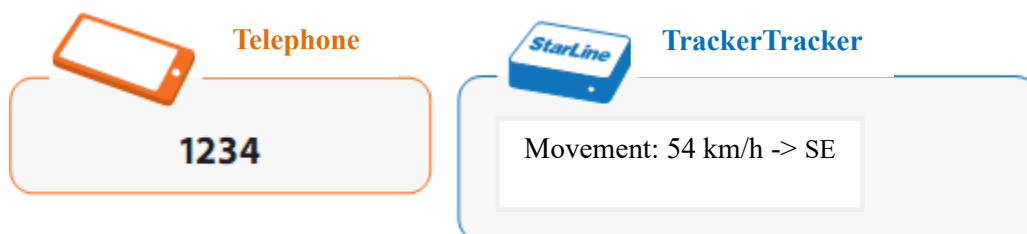
*You can determine the object location (for example, N59.96338 E30.35151), having entered the received coordinates into the line of the search system of Google Maps at the http://maps.google.ru or Yandex.Maps at the http://maps.yandex.ru.*

*The speed and contracted notation of the movement direction are displayed in the 'Movement' line: North, Northeast, East, Southeast, South, Southwest and Northwest. The movement parameters are displayed only if the speed is equal or more than 5 km/h.*

The determination of coordinates usually takes about 1 minute; the maximum time is 6 minutes. If the tracker fails to detect satellites and calculate the GLONASS/GPS coordinates, then GSM coordinates (identifier of 4 basic stations of the GSM network) will be sent instead of lines with the GLONASS/GPS coordinates.

**TrackerTra**

MCC:250
MNC:1
1 LAC:240 CID:2944
2 LAC:240 CID:2945
3 LAC:240 CID:2946
4 LAC:240 CID:1932

Enter these data on the website
http://mayak.mobi/lbs
to get the coordinates
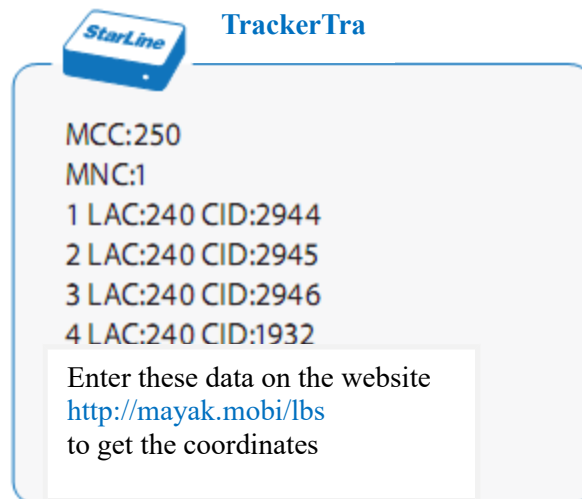
*The identifiers of basic the GSM network stations are indicated in the MCC, MNC, LAC and CID parameters. You can enter these data on the website by clicking the link, given in the message, and get the tracker approximate coordinate.*

If the reception of the coordinates is set in the format of the link in the settings (see Page 37), the tracker will response to the given query with the SMS message as follows:

**Tracker**

http://mayak.mobi/G01/GHpACVgCX
XNzWlhFu3dsfUNH1OGIBURVSWRlb
Xk0aTY1RshLnzHpU2Stdp1i525xrGef
duBSepdMn3XB
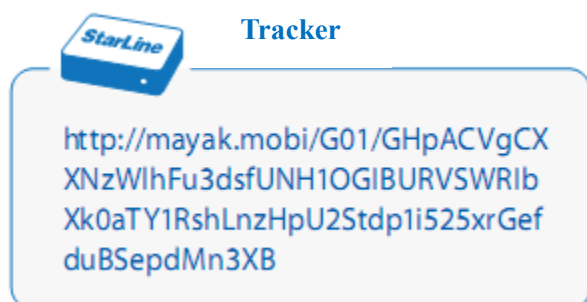
To view the map fragment with the location of the tracker, follow the link, given in the message.

## Getting the Extended Format Coordinates

To get the GLONASS/GPS coordinates of the tracker in the extended format, send any of the following SMS messages to its number:

| | | | |
|---|---|---|---|
| **\*\*\*\*** | **# (hash sign)** | **\*\*\*\*** | **ПОЛН** |
| | **FULL** | | |

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)

Having received this command, the tracker will send the response SMS message with the GLONASS/GPS coordinates in the standard format, speed and direction of the movement, with the indication of the additional parameters:

**StarLine M17 Tracker**

- current operation mode
- charge level of batteries in the 3-digit indicator form
- (###) – high level
- (##–) – medium level
- (#—) – low level
- (——) – the batteries are empty
- tracker temperature
- SIM card current balance
- state of the external power supply
- time of the next awakening

**Telephone**

**1234 FULL**

**Tracker**

NORMAL MODE
N59.568427
E35.456684
Movement: 54 km/h -> SE
Charge: (###)
Temperature: +29C
Balance: 320.59
External power supply: DISABLED
Activation: 12.08.2012 20:16 (+4).
Tracker**Tracker** will be ready to receive the commands.

If it is impossible to determine coordinates by the GLONASS/GPS signals, identifiers of the basic GSM stations shall be sent as in the case of the location query in the standard format.

## Audio Control Mode

When the audio control mode is active, the tracker calls to owner's number and switches on the built-in microphone by his command.

To switch the tracker to the audio control mode, send any of the following SMS messages to the tracker number:

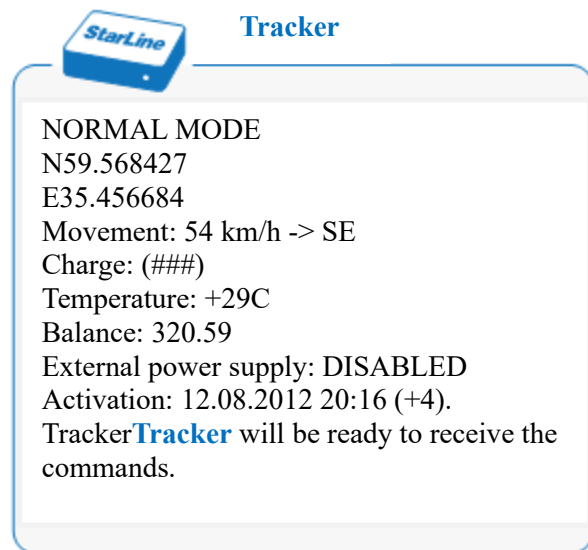| | | | | |
|---|---|---|---|---|
| **\*\*\*\*** | **C (eng)** | | **\*\*\*\*** | **ЗВОНОК** |
| | **CALL** | | | |

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)

**Telephone**

**1234CALL**
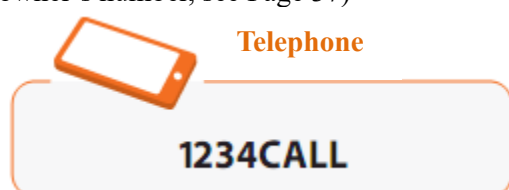
When the tracker transits into the active state and receives this command, it will response by calling the owner's number. The maximum time of the audio control is 4 minutes. Upon completion of the audio control session, the tracker remains active for 5 minutes, and if the SMS command comes, it will execute it.

If the tracker is active, it is enough to call its number from the owner's phone to activate the audio control mode.

## Movement Notifying Mode

The built-in movement sensor allows informing the owner about the unauthorized movement of the object, which the tracker is installed on. If the notifying mode is activated, the tracker will send the SMS message to the owner's phone at the movement start. Besides, it can activate the process of the data transmission to the monitoring server.

*In the first place, it is convenient to use this mode for the equipment, which is out of the owner's personal control for long periods.*

As soon as the tracker detects the movement, it transits to the active state and sends the SMS message to the owner (it starts transmitting the data to the monitoring server):

**TrackerTra**

Alert: Movement!
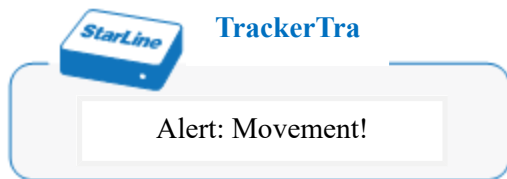
The SMS message about the movement start (the data transmission to the monitoring server starts) is sent only, if the protected object was in place for the last 15 minutes. The specified value can be changed – in this case, the owner will receive the SMS messages about the start of movement either after short or long stops. The data transmission to the monitoring server ends on the expiry of 15 minutes from the last determination of the movement.

The movement sensor switches the tracker to the active state from the doze one for 5 minutes. So, you can promptly response to the received signal – to listen to surroundings, switch the tracker to the alert mode etc. If the notifying mode with the monitoring activation is set, the tracker will be active for 15 minutes.

## Notifying Mode Control

The mode notifying the start of movement is off by default. The enabling/disabling the mode is carried out, using any of the following SMS commands:

| **\*\*\*\*** | **D [status]** |
|---|---|

| **\*\*\*\*** | **Д [status]** |
|---|---|

where \*\*\*\* - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)

[status] – A command, by which the control of the mode notifying the start of movement starts:
- + (plus) – enabling the notifying mode;
- - (minus) – disabling the notifying mode.

**Telephone**

1234D+

**TrackerTra**

Movement sensor: ON
Mode: SMS, Movement Determination
Interval: 15 min., Sensitivity: 1

**Telephone**

**TrackerTra**

1234D-

Movement sensor: OFF
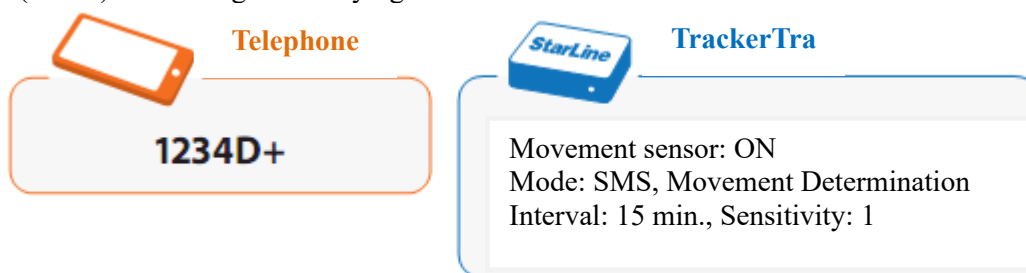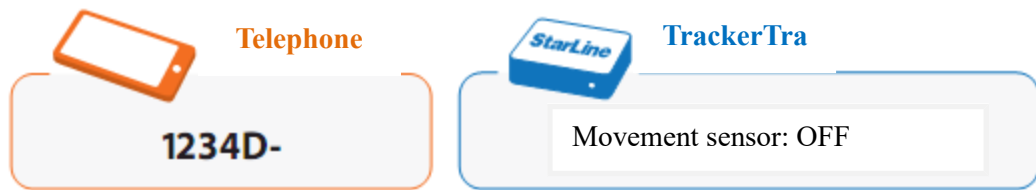
## Notification Parameters settings

The tracker is set to send the SMS messages at the start of movement by default, and the interval of sending the repeated message is 15 minutes. To change settings of the notifying mode, send any of these messages to the tracker's number:

| **\*\*\*\*** | **D [notification] [interval].[level]** |
|---|---|
| | **Д [notification] [interval].[level]** |

where \*\*\*\* - the current access password

**[notification]** – Response of the tracker to the start of movement:
- **S (C)** – Sending the SMS message to the owner's number
- **M (M)** – Activation of the data transmission to the monitoring server
- **SM (CM)** - Sending the SMS message and the monitoring activation

**[interval]**  - Time in **minutes** (integer number from 1 up to 120)
- Delay in sending the repeated SMS message about the start of movement
- Duration of the data transmission to the monitoring server

**[level]** – Threshold of actuation of the movement sensor (integer number from 1 up to 3)

- **1**- High level of the sensitivity
- **2**- Medium level of the sensitivity
- **3** -Low level of the sensitivity

**Telephone**

**Tracker**

**1234 D S 60.2**

Movement sensor: OFF
Mode: SMS and Monitoring,
Movement Determination
Interval:  60 min., Sensitivity: 2
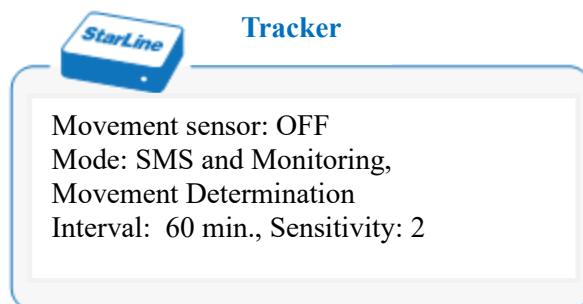
To correct parameters of the notifying mode, you may use the shortened version of the **D (Д)** command, having specified only the tracker response to the start of movement,  operation time of the timer or sensitivity (after the dot).

To get the information about current settings of the mode notifying the start of movement, send any of the following queries to the tracker number:

| **** | **D?** |
|------|--------|

| **** | **Д?** |
|------|--------|

# Control Commands Help

To get the information about the tracker control commands, send any of the following SMS messages to its number:

| **\*\*\*\*** | **?** |
|---|---|
| | **HELP** |

| **\*\*\*\*** | **ПОМОЩЬ** |
|---|---|

where \*\*\*\* - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)

**Telephone**    **Tracker**

1234?

Command List (enter the password instead of \*\*\*\*)
Tracker**Tracker**'s coordinates: \*\*\*\*, e.g. 1234
Extended coordinated: \*\*\*\*#, e.g. 1234#
Alert mode: \*\*\*\*!, e.g. 1234!
Normal Mode: \*\*\*\*-, e.g. 1234-
Call: \*\*\*\*C, e.g. 1234C
SMS at the movement: \*\*\*\*D+/-, e.g. 1234D+
Help on Control: \*\*\*\*?, e.g. 1234?
Help on Configuration: \*\*\*\*??, e.g. 1234??

# Tracker settings

## Basic settings

### Password settings

**ATTENTION!** *The access password to the tracker control from the owner's phone is **off** by default. We strongly recommend **enabling** the password request and **changing** its factory value **1234** to prevent controlling the tracker by outsiders.*

The access password can consist of 4 digits from 0 to 9. When sending the SMS messages with some commands from the owner's phone, you are allowed not to indicate the password in the message (see the table of SMS messages at Page 89). When sending commands from other phone numbers, you should always enter the password.

The enabling/disabling the access password for the SMS messages from the owner's phone and changing the factory value of the password of 1234 are carried out by the command of the following format:

| | |
|---|---|
| **\*\*\*\*** | **PASSWORD [new status] [status]** |
| | **ПАРОЛЬ [new status] [status]** |

where **\*\*\*\*** -  old or factory password

**[new password]** – The new access password (enter your figures and remember them)

**[status]** – The command, by which the necessity of entering the password entry is determined, when sending the SMS messages from the owner's phone:

- + (plus) – enabling the password for the SMS from the owner's phone;
- - (minus) – disabling the password for the SMS from the owner's phone;

Wait for the response SMS message with the confirmation of the command execution:

**Telephone**

**Tracker**

1234 PASSWORD 5678 +

Password: 5678
The password entry is always required

**Telephone**

**TrackerTra**

**5678 PASSWORD 0909 -**

Password: 0909
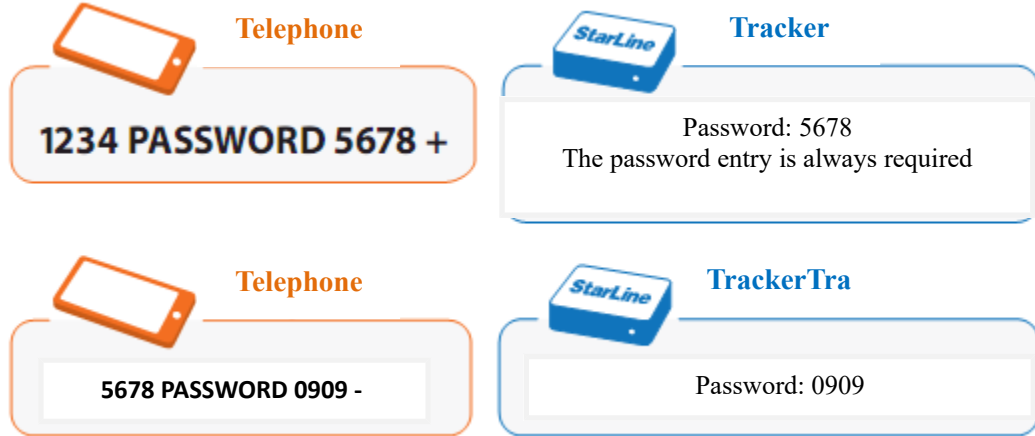
To correct settings of the access password, you can use the shortened variant of the **PASSWORD (ПАРОЛЬ)** command, having indicated only new password and status.

**ATTENTION!** *If the access password is enabled, it is not impossible to control the tracker without the knowledge of the password! To restore the factory password, use the function of reset of settings, using the button. Factory values of all adjustable tracker parameters will be restored.*

*It is recommended to set the mode of obligatory entry of the password with the '1234PASSWORD+' (1234ПАРОЛЬ+) command.*

## Date and Time settings

To set the internal clock automatically, send the following SMS command to the tracker:

| **** | **T** (rus, eng) |
|------|------------------|

The current date and time will be automatically set by the local time of sending the SMS message with the command.

Some mobile communication operators don't maintain the automatic date and time settings. To set the internal clock manually, send the following SMS command to the tracker:

| **** | **T [time] [date] [time zone]** (rus, eng) |
|------|---------------------------------------------|

where **** - current access password;

**[time]** – the current time in the **HH:MM** format (**HH** – hours, a two-figure number from 00 to 23, **MM** – minutes, a two-figure number from 00 to 59);

**[date]** – the current date in the **DD.MM.YYYY** format (**DD** – day, a two-figure number from 01 to 31, **MM** - month, a two-figure number from 01 up to 12, **YYYY** – year, a four-figure number from 2012 to 2100);

**[time zone]** – the current time zone by the Universal Standard Time (UTC) standard (positive or negative figure from -12 to +12), see the 'List of time zones' table on Page 93.

**Telephone**

**TrackerTra**

1234 T 16:20 15.03.2012 +4

Date and time: 16:20 15.03.2012 (+4)

The time and date will be set as soon as the tracker receives the SMS message with the command. The tracker checks commands for the correctness of the time and date: it is impossible to set the 13th month, the 30th of February etc.

To get the information about the current time and date, send the following query to the tracker's number:

| **\*\*\*\*** | **T?** (rus, eng) |
|---|---|

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)
In the tracker de-energization event (for example, for changing the batteries), the internal clock saves the current date and time. When the power is restored, the clock rate will be continued from the moment of its stoppage (±10 minutes). The time will be corrected automatically, when receiving the GLONASS/GPS coordinates.

If the time and date are not set after the power reset, the following message will come as a response to the given query:

**TrackerTra**

Date and time: 16:20 15.03.2012 (+4)
The time has been restored.
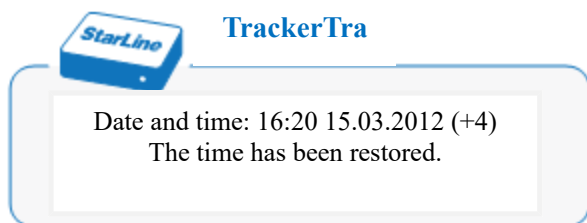
# Watch Dog Timers settings

**ATTENTION!** *The tracker sends the SMS messages with coordinates only to the owner's number! It is recommended to set the owner's number first (Page 22) and then proceed to the watch dog timers settings.*
*It is also necessary to set the current time and date (Page 38) for the correct operation of the watch dog timers.*

The **watch dog timer** is a periodical timer, at the actuation of which the tracker sends the SMS messages with coordinates to the owner's number. There are two such watch dog timers in the device, they are equivalent and operate in any operation mode of the tracker.

The first watch dog timer is set for the tracker's awakening once in 24 hours to execute commands received. The second watch dog timer is set for sending messages with coordinates with the interval of 7 days to control the tracker operability, check parameters and avoid blocking the account by the operator for the long absence in the network.

To change the current settings of the watch dog timers, send the SMS-commands giving the time, date and their operation mode to the tracker:

| | |
|---|---|
| **\*\*\*\*** | **B1 [time] [date] [interval] [format]** (rus, eng) |
| | **B2 [time] [date] [interval] [format]** (rus, eng) |

where **\*\*\*\*** - the current access password

**[time]** – The time of the watch dog timer initial actuation is in the **HH:MM** format (**HH** is the hours, a two-figure number from 00 to 23, **MM** is the minutes, a two-figure number from 00 to 59). At the specified time, the tracker will transit from the sleeping state to the active one for the first time and send a message with coordinates. The time of the watch dog timers initial actuation is set as 12:00 (+4) by default.

**[date]** – The date of the watch dog timer initial actuation is in the **DD.MM.YYYY** format (**DD** is the day, a two-figure number from 01 to 31, **MM** is the  month, a two-figure number from 01 up to 12, **YYYY** is the year, a four-figure number from 2012 to 2100). At the specified date, the tracker will transit from the sleeping state to the active one for the first time and send a message with coordinates. The date of the initial actuation of the watch dog timers is set as January 1, 2012 by default.

**[interval]** – The interval between the awakenings of the tracker in the format of minutes, hours and days (without spaces):
- from **01M** to **59M** (rus, eng) for the interval in **minutes**;
- from **01Ч** to **23Ч** (rus), from **01H** to **23H** (eng) for the interval in **hours**;
- from **01Д** to **30Д** (rus), from **01D** to **30D** (eng) for the interval in **days**;

The interval is counted from the moment of the first awakening, set by the time and date of the first actuation. It is allowed to indicate an interval containing minutes, hours and days at the same time (randomly, without spaces, for example, **3D10H**).

**[format]** – The kind of messages with the GLONASS/GPS/GSM coordinates, sent upon the tracker's awakening:
- **L (Л)** is a message in the link format
- **T (T)** is a message in the text format
- **LT (ЛТ)** is a message in the format of the link and text
- **K (K)** is the command waiting mode (a message with coordinates won't be sent, the tracker will wait for the owner's commands).

*The tracker transits to the active state and waits for commands within 5 minutes in the normal mode after the awakening, whereupon it transits to the sleeping state. If the interval of the awakening is less than 5 minutes, the tracker will be active all the time.*

If the actuation date and time of both watch dog timers coincide, either a more functional watch dog timer will actuate or both of them, if their settings are equivalent (for example, the first watch dog timer is set to send coordinates in the link form, the second one is in the text form).

**Example of the watch dog timer settings**

The tracker must send the SMS message with coordinates in the form of the link and text to the owner's number each 5 days at 20:00 beginning from March 15, 2012. The B1 tracker should be set for 20:00, March 15, 2012 in the mode of the coordinates sending in the form of the text with the interval of 5 days.

**Telephone**

**1234 B1 20:00 15.03.2012 5D LT**

*StarLine* **TrackerTra**

**Activation** 15.03.2012 (+4). You will send SMS with coordinates in the form of the text and link to the number of 79112345678.
**Watch dog timer 1:** 15.03.2012 20:00 (+4), Period 5D, text and link.
**Watch dog timer 2:** 01.01.2012 12:00 (+4), Period 7D, text.

- **Activation** –The next tracker awakening date and time, as well as the format of coordinates, which will be sent upon the awakening (the data is automatically updated after each watch dog timer actuation).
- **Watch dog timer 1** – The date and time of the first watch dog timer initial actuation, period of the actuation and format of coordinates, which will be sent upon the awakening.
- **Watch dog timer 2** – The initial actuation date and time of the second watch dog timer, period of the actuation and format of coordinates, which will be sent upon the awakening.

*The date and time of the activation and initial actuation are assigned to the time zone, which was set during the watch dog timers configuration. This means that if you change the time zone, the date and time will be displayed according to the new time zone. Meanwhile, the settings of the watch dog timers will be saved, and the tracker's awakening will occur at the appointed time, assigned to the initial time zone.*

To correct the watch dog timers settings, you can use the shortened variant of the **B1** (**B2**) command, having indicated only those parameters, which should be changed.

The **B1** (**B2**) command without parameters changes the date and time of the watch dog timer initial actuation to the current parameters, saving the previously set value of the awakening period and coordinates format.

**Telephone**

**Tracker**

1234 B2

**Activation**  15.03.2012 (+4). You will send the SMS with coordinates in the form of the text and link to the number of 79112345678.
**Watch dog timer 1:** 15.03.2012 20:00 (+4), Period 5D, text and link.
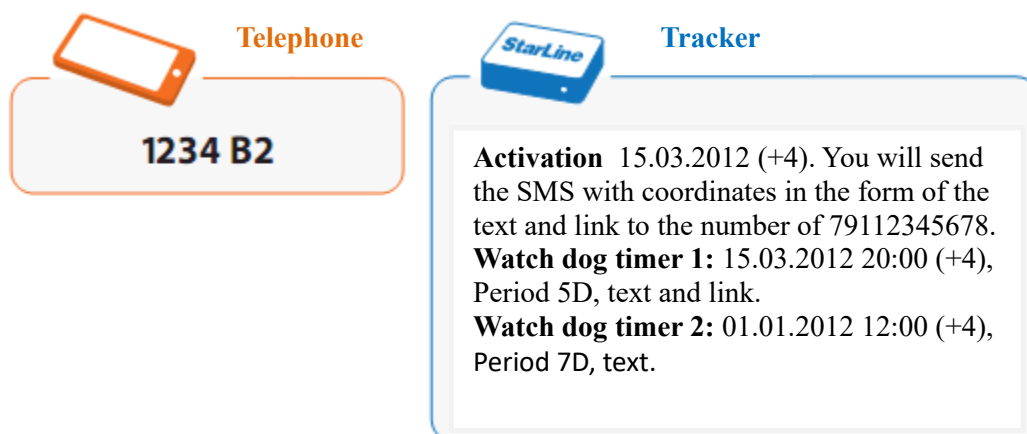**Watch dog timer 2:** 01.01.2012 12:00 (+4), Period 7D, text.

To get the information about the current watch dog timers settings, send the following query to the tracker number:

| **** | **B?** (rus, eng) |
|------|-------------------|

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)

## Message Format settings

The messages with the GLONASS/GPS/GSM coordinates, sent by the query of the owner (see 'Query for determination of coordinates', Page 26), are displayed in the text form by default. To change the format of messages with coordinates, you may use any of the following SMS commands:

| **\*\*\*\*** | **F [format]** |
|---|---|

| **\*\*\*\*** | **Ф [format]** |
|---|---|

where \*\*\*\* - the current access password

**[format]** – The kind of messages with the GLONASS/GPS/GSM coordinates, sent upon the tracker's awakening:
- **L (Л)** is the message in the link format
- **T (Т)** is the message in the text format
- **LT (ЛТ)** is the message in the format of the link and text



**Telephone**

**1234 F LT**

**Tracker**

The tracker**Tracker** will send you the SMS with the text and link

To get the information about the current settings of the messages format, send the following query to the tracker  number:

| **\*\*\*\*** | **F? [format]** |
|---|---|

| **\*\*\*\*** | **Ф? [format]** |
|---|---|

where \*\*\*\* - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)
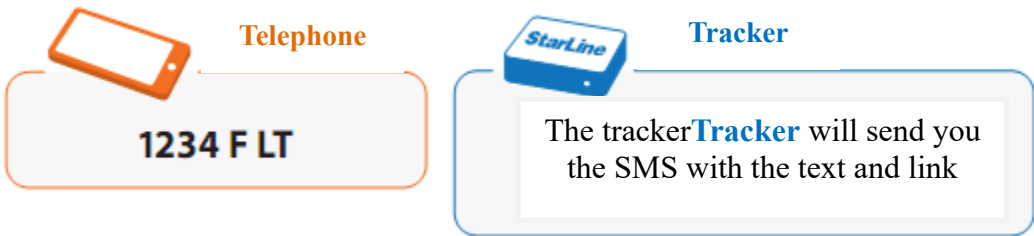
## Messages Code Selecting

The Russian alphabet symbols (Cyrillic) are used to display the text in the incoming SMS messages by default. Upon changing the code to the Latin alphabet, the messages will be delivered faster and reduce the service expenses.

To switch the message code to the **Latin alphabet**, send any of the following SMS messages to the tracker's number:

| **\*\*\*\*** | **ENGLISH** | | **\*\*\*\*** | **АНГЛИЙСКИЙ** |
|---|---|---|---|---|
| | **ENG** | | | **АНГЛ** |

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)

To switch the code back to the **Cyrillic alphabet**, send any of the following SMS messages to the tracker number:

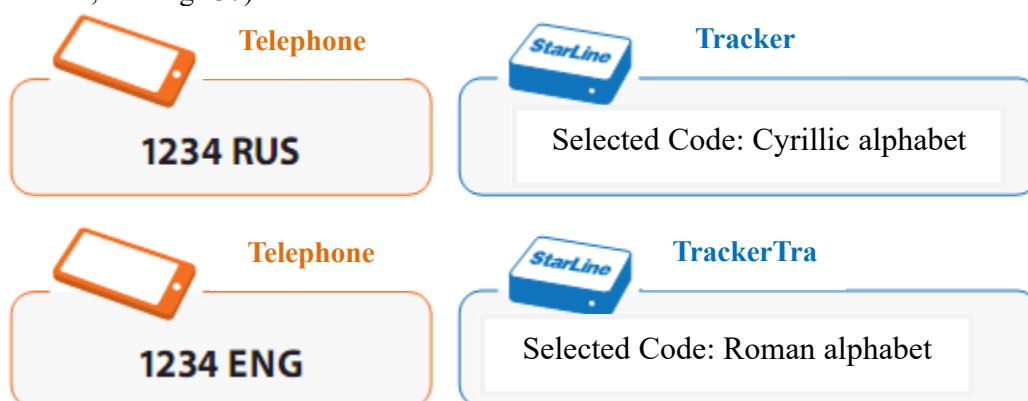| **\*\*\*\*** | **RUSSIAN** | | **\*\*\*\*** | **РУССКИЙ** |
|---|---|---|---|---|
| | **RUS** | | | **РУС** |

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)



**Telephone**

**1234 RUS**

**Tracker**

Selected Code: Cyrillic alphabet

**Telephone**

**1234 ENG**

**TrackerTra**

Selected Code: Roman alphabet

# Extended settings

## Balance Control

The balance inquiry command allows you to get the information about the state of the SIM card account. For the convenience of controlling the account state, there is a possibility to set the notification about the law balance. The tracker checks the balance on the account periodically, and if the amount on the account became less than the threshold, set in the settings, it sends the SMS with the warning to the owner's number.

To determine the number of the balance inquiry, you can use the function of the communication operator automatic recognition, whose SIM card is installed in the tracker. The balance inquiry command in the network of the mobile operator usually is in the form of **\*101#** or **\*102#**. The command list of the most widespread operators is given in the relevant table (the 'Reference Information' section on Page 89).

To set the balance inquiry number automatically, send the SMS command of the following format to the tracker's number:

| **\*\*\*\*** | **M** (rus, eng) |
|---|---|

where **\*\*\*\*** - the current access password

*If the results of the automatic check reveals that the necessary query command is not in the database of the tracker, the standard query code of **\*100#** will be set. If it is impossible to get the information about the state of the account by this query, you should check the format of the balance inquiry command with the communication operator, whose SIM card is installed in the tracker, whereupon, execute a manual configuration.*

To set the balance inquiry number and threshold of notifying the low balance manually, send an SMS message of the following format to the tracker's number:

| **** | M [inquiry number] [warning threshold] (rus, eng) |
|------|---------------------------------------------------|

where **** - the current access password

[inquiry number] – The command for inquiring the balance from the communication operator, whose SIM card is installed in the tracker (it is not indicated at the automatic configuration);

[warning threshold] – The amount in rubles (integer number, positive and negative), upon reaching which, the tracker will send SMS warning about the low balance to the owner's number.

**ATTENTION!** *To get the correct information about the state of the account from the **MTC** communication operator, it is recommended to set the balance inquiry number of **#100#**.*

If necessary, it is allowed to change only one of the given parameters (inquiry number or warning threshold). It will affect the other parameter as follows: the warning threshold will remain unchanged, while the inquiry number will be reset according to parameters of the automatic configuration (see the table of communication operators on Page 93).

**Telephone**

**TrackerTra**

1234 M *102# –150

Balance inquiry number: *102#
Threshold: -150
Balance: 320.48
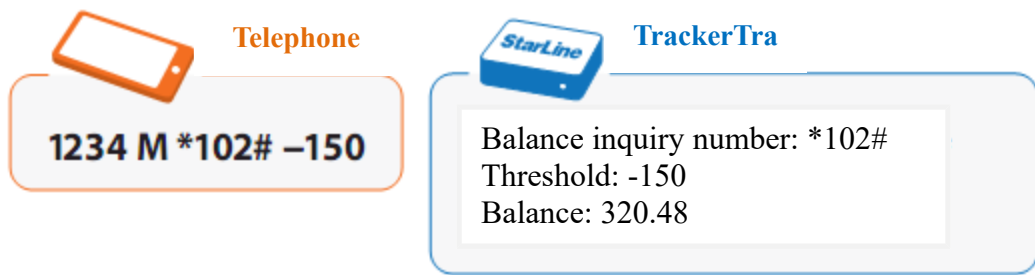
To get the information about the state of the account, current settings of the balance inquiry number and threshold warning about the low balance, send the following message to the tracker number:

| **** | **M?**  (rus, eng) |
|------|--------------------|

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37)

# Internet Access settings

Controlling the movements of the tracker in the system of the satellite monitoring www.starline-online.ru, checking the availability of the firmware new version and carrying out the procedure of its update are possible only after the preliminary configuration of parameters of the GPRS access point.

For the convenience of access point settings the parameters, you can use the function of the automatic recognition of the communication operators. Send any of the following commands to the tracker number:

| **** | I |
|------|---|

| **** | И |
|------|---|

where **** - current access password.

*If the results of the automatic check reveals that the necessary access point settings are not in the database of the tracker, the standard settings shall be set (see the table of communication operators, Page 93). If it is impossible to connect to the internet with standard settings, you should check values of the given parameters with the directory-inquiry service of the communication operator, whose SIM card is installed in the tracker, whereupon, set them manually.*

To set parameters of the access point manually, send any of the following commands to the tracker number:

| **** | I [APN] [login] [password] |
|------|----------------------------|

| **** | И [APN] [login] [password] |
|------|----------------------------|

where **** - the current access password;

**[APN]** – Address of the access point;
**[login]** – The user's name, under which the entry is carried out (it can be absent);
**[password]** – Access password necessary to start the session (it can be absent).
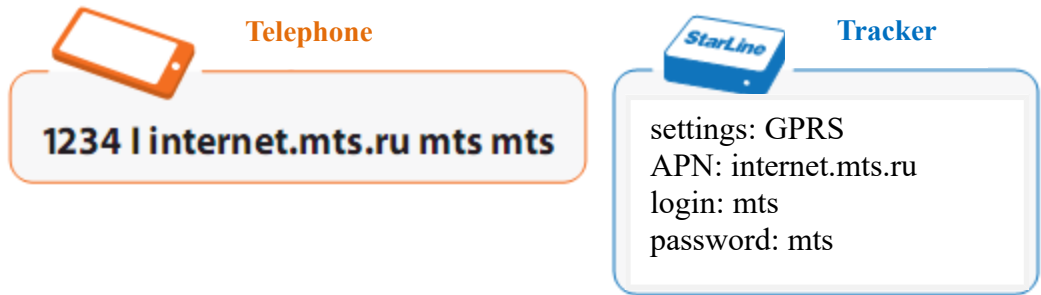


To get the information about the current Internet access settings, send any of the following messages to the tracker number:

| **\*\*\*\*** | **I?** |
|---|---|

| **\*\*\*\*** | **И?** |
|---|---|

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37).

## Tracker Name settings

The format of the SMS messages sent by the tracker provides a possibility to add the header (name of the tracker), which can be used as the identifier (for example, 'Wife's car', 'My boat' etc.).
To set the name of the tracker, send any of the following messages to its number:

| **** | **NAME [name]** |
|------|------------------|

| **** | **ИМЯ [name]** |
|------|------------------|

where **** - current access password.

**[name]** – A text line up to 40 symbols long (Russian and Latin letters, figures, symbols, spaces).



**Telephone**  **Tracker**

1234 NAME Toyota Camry

Toyota Camry
Tracker's name: Toyota Camry
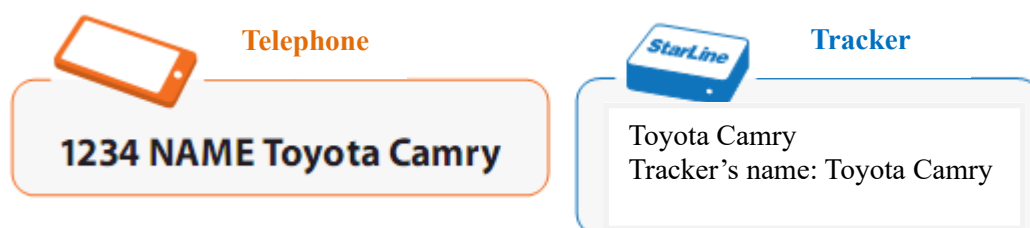
To get the information about the current tracker name, send any of the following messages to its number:

| **** | **NAME?** |
|------|-----------|

| **** | **ИМЯ?** |
|------|-----------|

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37).

## Tracker Phone Number settings

The register the tracker in the www.starline-online.ru system, you should save the subscriber number, recorded in the tracker SIM card, in its memory.

Send any of the following commands to the tracker number:

| **\*\*\*\*** | **MAYAKNUM  [tracker's number]** |
|---|---|

| **\*\*\*\*** | **НОМЕРМАЯКА          [tracker's number]** |
|---|---|

where **\*\*\*\*** - current access password.

**[tracker's number]** – The tracker phone number (it must be indicated in the international format, begins from the '+' number and consists of 10-13 figures).



**Telephone**

1234 MAYAKNUM +79052345678

**Tracker**

Tracker's number:
+79052345678
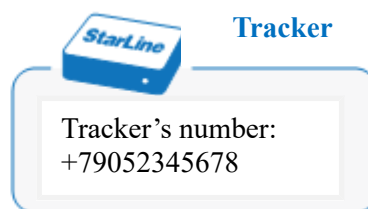
To get the information about the current phone number of the tracker, send any of the following messages to its number:

| **\*\*\*\*** | **MAYAKNUM?** |
|---|---|

| **\*\*\*\*** | **НОМЕРМАЯКА?** |
|---|---|

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37).

# Current settings Query

By the owner's query, the tracker can send the extended information about current settings in the form of the SMS message with the following parameters:

- Owner's phone
- Tracker number
- Time and date
- settings of watch dog timers
- Format of the messages
- settings of the Internet access

- Balance inquiry number and warning threshold
- Current operation mode
- State and settings of the monitoring and movement notifying mode

To check the settings and operation mode of the tracker, send any of the following commands to the tracker number:

| **** | PARAMS |
|------|--------|

| **** | ПАРАМЕТРЫ |
|------|-----------|

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37).

**Telephone**

**1234 PARAMS**

**StarLine** **Tracker**

Owner: +791123456788
Tracker's number: +79052345678
Time 23.08.2012 12:24 (+4)
Watch dog timer 1 23.09.2012 17:30 (+4) 10H text and link
Watch dog timer 2 27.09.2012 12:00 (+4) 7D text
Format link
Balance *102# Threshold 30
GPRS internet.beeline.ru, beeline, beeline
ALERT MODE
Movement SMS ON 60 min. Sensitivity 2
MON ON dev.starline.ru:12300 30 sec.

## Reset to Factory Settings

To return to the tracker factory settings, there is a possibility to restore parameters by the owner's command and using the button.

⚠️ **ATTENTION!** *The command of the settings reset restores the factory settings of **all adjustable parameters** of the tracker (except of the current password and owner's number). The results cannot be cancelled after this operation! It is necessary to readjust the tracker after resetting the settings.*

To reset the settings to the factory settings, send any of the following SMS commands to the tracker number:

| **\*\*\*\*** | **RESET** |
|---|---|

| **\*\*\*\*** | **СБРОС** |
|---|---|

where \*\*\*\* - current access password.

**Telephone**

**1234 RESET**

**Tracker**

Owner: +791123456788
TrackerTracker's number: +791122233344
Time 1.01.2012 12:00 (+4) RESTORED
Watch dog timer 1 1.01.2012 12:00 (+4) 1D
Waiting for commands
Watch dog timer 2 1.01.2012 12:00 (+4) 7D text
Format text
Balance Threshold 50
GPRS internet, ,
NORMAL MODE
Movement SMS OFF 15 min. Sensitivity 2
MON OFF dev.starline.ru:12300 10 sec.

The settings can be reset without sending the SMS command. To do this, proceed as follows:

**1.** Carefully disassemble the tracker body, having unscrewed 6 screws, and remove the batteries.

**2.** Press the activation button and, holding it pressed, insert the batteries. The LED on the tracker's button will light.

**3.** Leave the button, until the LED goes out.

**4.** The LED will light up again in 2 minutes. Press the button shortly, while the LED lights.

The tracker will reset the settings and generate 4 long light signals of the confirmation, whereupon it will go off. To continue working with the tracker, you should switch it on, having pressed the button on the butt end, and set new settings.

**ATTENTION!** *This variant of settings reset restores the factory values of* **all adjustable parameters of the tracker** *and resets* **the current password and owner's number.**

# Service Functions

## Firmware Updating

*Before executing the procedure of updating the firmware, you should execute the configuration of the GPRS access point parameters (see 'settings the access to the Internet', Page 51).*

The check for the new firmware on the website of the manufacturer is carried by the query of the owner. To update the firmware, you should send any of the following SMS commands to the tracker number:

| **\*\*\*\*** | **FWUPDATE** |
|---|---|

| **\*\*\*\*** | **ПЕРЕПРОШИВКА** |
|---|---|

where \*\*\*\* - current access password.

**Telephone**

**1234 FWUPDATE**

If the check doesn't find any new version of the firmware, the tracker will send the relevant SMS message:

**TrackerTra**

The software update has been cancelled.
The latest version is installed: 1.0.1287

In the presence of the firmware new version, the tracker starts loading it and sends the SMS message:

**TrackerTra**

The software update process has been started

Upon completion of the firmware update, the tracker will send the information SMS message:

**Tracker**

The software update has been completed.
Version 1.0.1288.

If the firmware update failed, the tracker will send the SMS message about the error:

**Tracker**

Firmware update error!

When updating the firmware, all the tracker settings are saved.

## Service Data Query

By the owner's query, the tracker can send the service information in the form of the SMS message with the indication of the following parameters:

- Serial number
- Current version of the firmware
- Hardware version
- IMEI identifier

- tracker's temperature
- Voltage and charge level of batteries in the form of the 3-digit indicator (###)

To get the service information, send any of the following SMS commands to the tracker number:

| **\*\*\*\*** | **INFO** |
|---|---|

| **\*\*\*\*** | **ИНФО** |
|---|---|

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37).

**Telephone**

**1234 INFO**

**TrackerTra**

SN: M1700141021531
FW ver 0.2.2493
HW ver 8.00
IMEI 355094042836407
BAT 3.300V (###), TEMP 25C

## USSD Queries Sending

For convenience of the tariffs control and services on the subscriber tracker SIM card number, there is a possibility to send short commands (USSD queries) to the tracker:

*Please, inquire the actual list of USSD queries for your region from the communication operator, whose SIM card is installed in the tracker.*

To execute a USSD query, send any of the following SMS commands to the tracker's number:

| **\*\*\*\*** | **USSD [query]** |
|---|---|

| **\*\*\*\*** | **УССД [query]** |
|---|---|

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37);
**[query]** – A short command for enabling or disabling a service, changing a tariff, inquiring the balance etc.

The response of the communication operator about the execution of the command will be sent by the tracker to the phone number, which the USSD query was made from.

**Telephone**

1234 USSD #100#

**TrackerTra**

*StarLine*

Balans:350,00r,Limit:100r

## Tracker Operation Report Sending

⚠️ *Before executing the procedure of downloading the tracker operation report, you should execute the configuration of the GPRS access point parameters (see 'settings the access to the Internet', Page 51).*

In case of any failure of the tracker, there is a possibility to upload the operation report to the server. The report doesn't contain any personal information and is intended only for the analysis by designers.

📋 *This function can be useful, when contact Technical Support Service.*

To generate the report and pass it to designers, you should send any of the following SMS commands to the tracker's number:

| **** | **REPORT** |
|------|------------|

| **** | **ОТЧЕТ** |
|------|-----------|

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37);

**Telephone**

1234 REPORP

In the event of the successful establishment of connection with the server, the tracker sends the SMS message:

**Tracker**

The download of the report has been started.
SN: M1700141021531

After the download starting, it is recommended to send no messages to the tracker number, until the SMS with the confirmation of the successful data transmission is received.

**Tracker**

The download of the report has been completed.
Downloaded: 49564 bytes

If the download failed, the tracker will send the SMS message about the error:

**TrackerTra**

Report download error

## Tracker Restarting

In some cases (for example, at a failure to transfer data via GPRS, for the activation of SIM cards of some communication operators after the balance recharge etc.), the restart may be required to continue working with the tracker. To restart the tracker, it is not necessary to remove batteries of the tracker - it is enough to send any of the following SMS commands to its number:

| **** | **RESTART** |
|------|-------------|

| **** | **ПЕРЕЗАГРУЗКА** |
|------|-----------------|

where **** - current access password.

 **ATTENTION!** *This command is not intended for sending as a part of the SMS message containing several commands.*

After restarting, the tracker sends the SMS message:

**Tracker**

The tracker**Tracker** has been restarted.
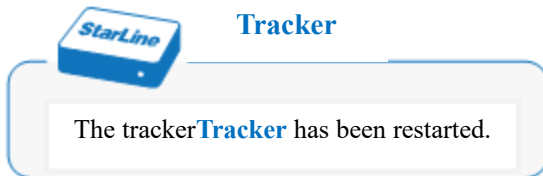
The restart procedure doesn't affect the configuration and operation mode of the tracker – all parameters set before are saved at the restart.

# Configuration Commands Help

To get the information about commands of settings the tracker, send the SMS message of the following format to its number:

| **\*\*\*\*** | **??** |
|---|---|

where **\*\*\*\*** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37);

**Telephone**

**1234 ??**

# Monitoring

The tracker's owner can monitor all movements of the controlled object from any computer connected to the Internet. In order to do this, you should register the tracker on the monitoring server (the stepwise instruction is at the www.starline-online.ru).

The IMEI identifier, required for the tracker registration on the monitoring server, is indicated on the label of the tracker. It should be also sent in the SMS message inquiring the service data, Page 60.

*To realize the monitoring function, the mode of the batch GPRS data transmission is used. Before you start working with the monitoring server, you should execute the configuration of the GPRS access point parameters (see 'settings the access to the Internet', Page 51).*

## Data Transmission Mode Controlling

To use the monitoring function, you should enable the mode of the data transmission between the server www.starline-online.ru and the tracker.

Enabling and disabling the mode of the data transmission to the monitoring server is carried out, using any of the following commands:

| **\*\*\*\*** | **MON [status]** |
|---|---|

| **\*\*\*\*** | **MOH [status]** |
|---|---|

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37);

**[status ]** – A command enabling and disabling the transmission of data about the location of the tracker to the monitoring server:

- + (plus) – enabling the data transmission
- - (minus) - disabling the data transmission
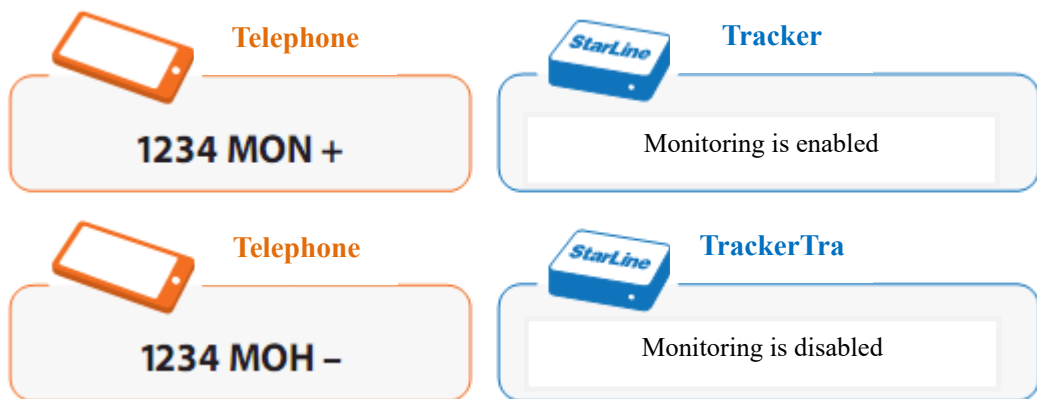


After receiving the command of enabling the data transmission mode and establishing a connection with the server, the tracker will send the SMS message with the confirmation of the successful activation of the monitoring:
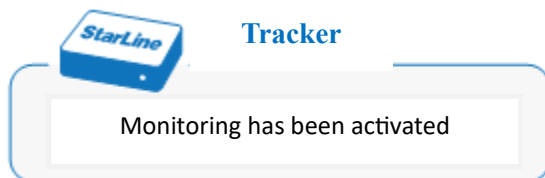


If it is required to change the frequency of data transmission to the monitoring server, send any of the following SMS commands to the tracker number:

| **\*\*\*\*** | **MON [interval]** |
|---|---|

| **\*\*\*\*** | **МОН [интервал]** |
|---|---|

where \*\*\*\* - the current access password;

**[interval]** – The period of sending the batches to the server in seconds (integer number from 0 up to 300).
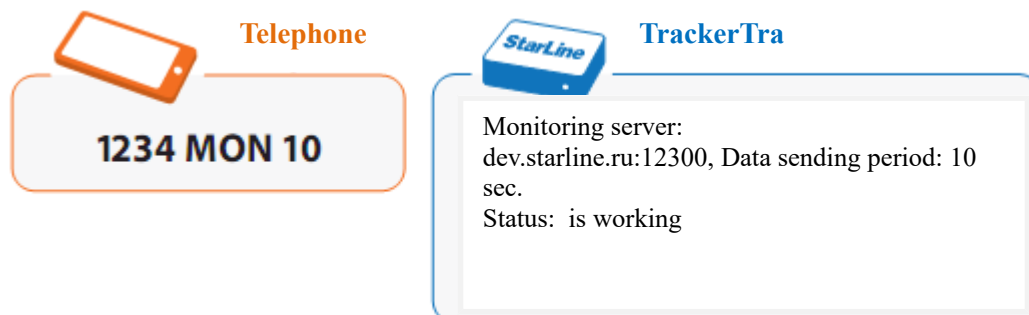


To get the information about the current parameters and status of the monitoring, send any of the following SMS commands to the tracker number:

| **\*\*\*\*** | **MON?** |
|---|---|

| **\*\*\*\*** | **МОН?** |
|---|---|

where \*\*\*\* - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37);

Within the operation, the tracker monitors the connection state and data transmission to the monitoring server. If the next attempt to connect with the server is unsuccessful, the tracker status will take one of the following values, depending on the reason of the communication failure:

- The GPRS connection is unavailable
- Server is unavailable
- Server communication error

Once the communication is restored, the tracker will automatically restore the process of the data transmission, therefore there is no need to connect to the server again.

## Monitoring Features

**1.** The data transmission mode is notable for the increased energy consumption, so, when using it, it is recommended to connect the tracker to the external power supply. Otherwise, the capacity of new batteries will be sufficient for not more than 1-2 days of the uninterrupted operation.

**2.** The GPRS service should be activated for the used SIM card.

**3.** In the absence of the GSM signal or connection with the server, current location data are stored in the internal memory of the tracker. Upon restoring the communication, they will be sent to the monitoring server. With a 10 second batch sending interval set by default, the tracker is able to accumulate object movement data within 5 days.

**3.** When using the monitoring function, the ability to control the tracker by using SMS commands and receiving response SMS messages remains.

**4.** The GPRS traffic cost in the roaming can be rather high. It is recommended to check the tariff with the communication operator.

# External Device Operation

The tracker can operate not only autonomously, but also with the external power supply. In addition, it can control one external device and has one external alarm input.

## External Power Supply Connecting

**ATTENTION!** *The tracker will be active regardless of the selected operation mode, when powered from the external power supply. It is recommended to use the external power supply, when working with the monitoring server* *www.starline-online.ru*. *In the monitoring mode, the tracker continuously monitors the object location and sends the information to the specified server, where you can watch all the movements of the controlled object.*

To use the external power supply, you should connect the supplied cable to the tracker. The connection of wires of the cable to external devices is carried out as follows:
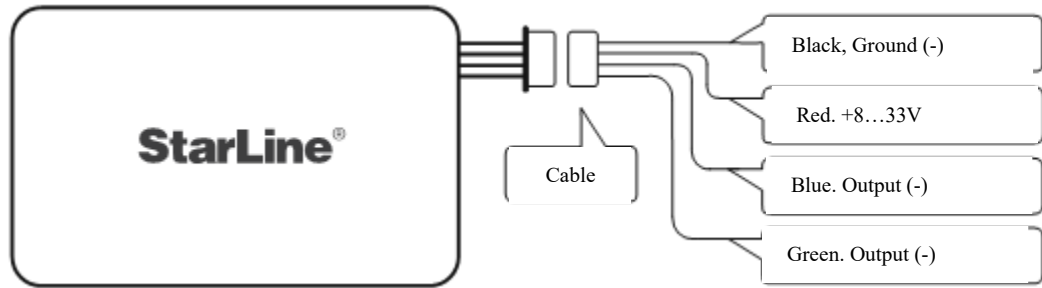
- The black wire is connected to the ground.
- The red wire is connected to the on-board network of 12/24V (a power supply unit of 8…33 V). \
- The blue wire - the output of the additional channel (-) of 200 mA max.
- The green wire – the external output (-).

The red wire should be connected to the 12/24 V power pole, while the black one should be connected to the ground. It is allowed to connect the tracker to the external power supply simultaneously with the installed batteries. In case of the external power supply disconnection, the tracker will automatically switch to the battery power.

Upon connecting the external power supply, the tracker will transit to the active state and send the warning the SMS message to the owner's number by default. The tracker can also start the transmission of data to the monitoring server (depending on settings made).
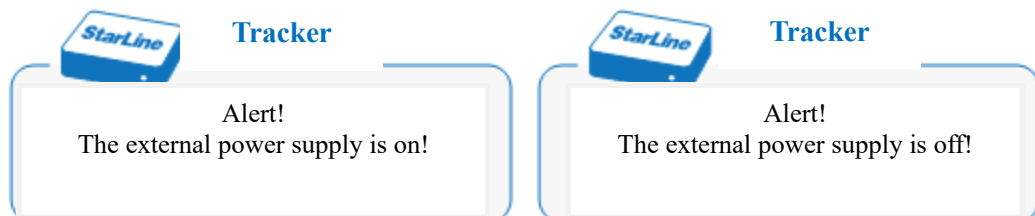
The tracker remains in the active state (it can be changed in settings) until the moment of disconnection of the external power supply.  When the external power supply is removed, the relevant SMS message will be sent to the owner, and the monitoring will be disabled.

The control of notifications about the change of the state of the external power supply, operation mode of the tracker and transmission of data to the monitoring server at the external power supply is carried out by sending any of the following SMS commands to the tracker number:

| | |
|---|---|
| **\*\*\*\*** | **POWER [on] [off] [state] [monitoring]** |
| | **ПИТАНИЕ [on] [off] [state] [monitoring]** |

where **\*\*\*\*** - the current access password;

**[on]** and **[off]** – The control commands for the sending SMS messages upon the connection/disconnection of the external power supply:

- **+ (plus)** – Allow the notification about the connection (disconnection) of the external power supply;
- **- (minus)** - Prohibit the notification about the connection (disconnection) of the external power;

**[state]** – The control command for the tracker  state at the external power supply in the normal operation mode (Page 24):

- **A (A)** – Prohibit the transition to the sleeping state. In presence of the external power supply, the tracker will be in the active state.
- **N (H)** – Allow the transition to the sleeping state. In presence of the external power supply, the tracker will remain in the sleeping state or will transit to it in 5 minutes after sending the last message, if it was active. The transition to the sleeping state at the external power supply will be impossible, if the tracker is in the active state by the external input signal.

If the alert mode (page 26) it is selected as the basic operation mode, the tracker will be active all the time at the external power supply, regardless of the settings command **[state]**.

**[monitoring]** – The control command for the mode of the transition of data to the monitoring server at the external power supply:

- **M+** - Automatically enable the monitoring in the presence of the external power supply (only in the active state)
- **M-** - Not to enable the monitoring in the presence of the external power supply.

*Before using the monitoring function, you should set parameters of the GPRS access point (see on Page 51) and register the tracker on the monitoring server www.starline-online.ru.*

## Example of Setting of External Power Supply Parameters

To control movements of a vehicle, it is necessary that the tracker would automatically connect to the monitoring server, when turning on the ignition, and would continue sending the data to the server until the end of the trip (turning off the ignition).
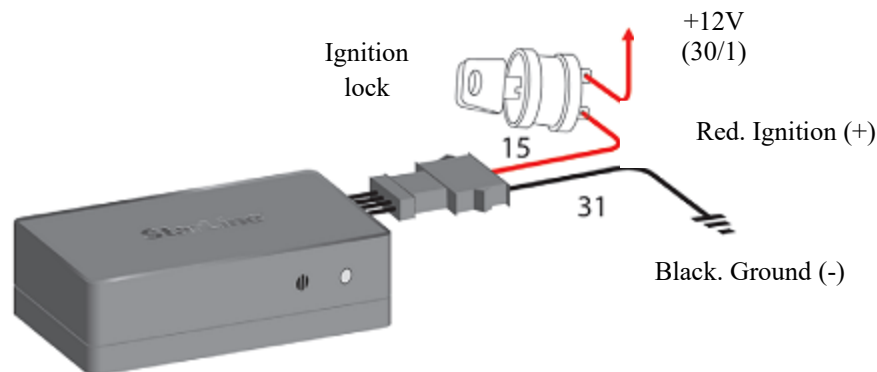
In this case, you should connect the wire of the external power supply to the ignition circuit and send the following SMS message to the tracker number:

**Telephone**

**Tracker**

1234 POWER –– A M+

External power supply:
Tracker**Tracker** is permanently active; monitoring
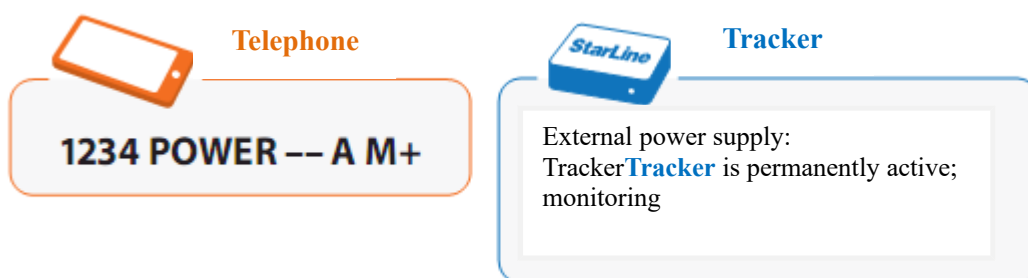
To correct the settings of the external power supply, you may use the shortened variant of the **POWER (ПИТАНИЕ)** command, having indicated only those parameters, which should be changed:

**Telephone**

**TrackerTra**

1234 ПИТАНИЕ +– Н

External power supply:
SMS, upon the connection; monitoring

To get the information about current settings of the external power supply, send any of the following queries to the tracker number:

| **** | POWER? |
|---|---|

| **** | ПИТАНИЕ? |
|---|---|

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37).

# External Input Connection

The external input is intended for the activation of the tracker at an alarm system alert, or when receiving the signal from the sensors of impact, tilt, movement etc. The external input operates in any mode, both when connecting to the external power supply and battery power.

To connect the external input, use the green wire (see the connection diagram on Page 69). The activation of the external input is carried out by connecting the green wire to the ground of the on-board network; when doing so, the black wire should be connected to the ground too. If the external input is not connected to the ground or connected to the power pole, it is considered as inactive.

At the appearance of a signal at the input, the tracker can send the warning message to the owner, activate the data transmission to the monitoring server, or execute both of these actions (depending on settings made). In case of a signal failure at the input, the relevant SMS message will be sent to the owner, and the monitoring will be disabled.

| *StarLine* Tracker | *StarLine* Tracker |
|---|---|
| Alert!<br>The external input is on! | Alert!<br>The external input is off! |

The notification about the change of the state of the external input is disabled, the monitoring is not activated.

The configuration of parameters of the tracker notifications and operation mode at the presence of the signal at the external input is carried out by sending the following SMS commands to the tracker's number:

| | |
|---|---|
| **\*\*\*\*** | **IN [on] [off] [state] [monitoring]** |
| | **ВХОД [вкл] [выкл] [состояние] [мониторинг]** |

where \*\*\*\* - the current access password;

**[on]** and **[off]** – The control commands for sending the SMS messages at the appearance/failure of the signal at the external input:
- + (plus) – Allow the notification about switching on (switching off) the external input;
- - (minus) - Prohibit the notification about switching on (switching off) the external input;

If the notification about the change of the state is allowed, then, at the appearance (failure) of the signal in the green wire, the tracker wakes up and sends the warning SMS message to the owner. The next 5 minutes, the tracker is in the active state and waits for commands, whereupon it transits to the sleeping state (in the normal operation mode, if transition to the sleeping state is not prohibited by the **[state]** command).

**[state]** – The control commands for the tracker's state in the presence of a signal at the external input in the normal operation mode (Page24):

- **A (A)** – Prohibit the transition to the sleeping state. In the presence of a signal at the input, the tracker will be active.
- **N (H)** - Allow the transition to the sleeping state. In the presence of a signal at the input, the tracker will remain in the sleeping state or transit to it in 5 minutes after sending the last message, if it was active. The transition of the tracker to the sleeping state will be impossible at the presence of a signal at the external input, if the tracker is in the active state by the external power supply.

If the alert mode (page 26) is selected as the basic operation mode, the tracker will be active all the time in the presence of a signal at the external input, regardless of the command settings **[state]**.

**[monitoring]** – The control command for the mode of the data transition to the monitoring server in the presence of a signal at the external input:

- **M+** - Automatically enable the monitoring in the presence of a signal at the external input (only in the active state)
- **M-** - Not to enable the monitoring in the presence of a signal at the external input.

*Before using the monitoring function, you should set parameters of the GPRS access point (see on Page 51) and register the tracker on the monitoring server www.starline-online.ru.*

**Telephone**

1234 IN ++ A M+

**Tracker**

StarLine

External input:
SMS, when switching on;
Tracker**Tracker** is active; monitoring
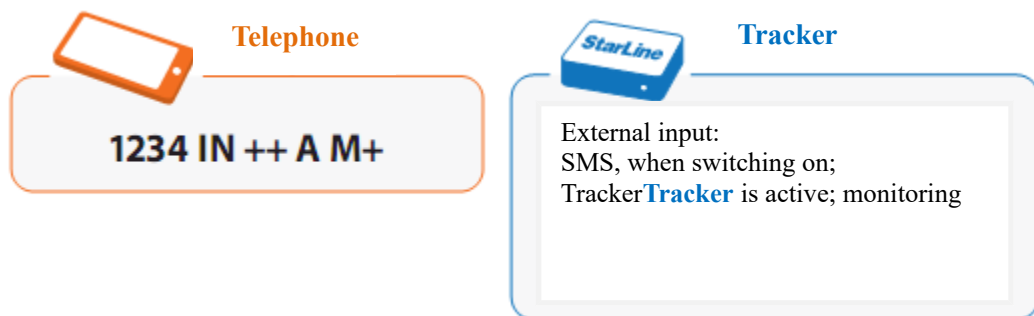
To correct the external input settings, you may use the shortened variant of the **IN (ВХОД)** command, having indicated only those parameters, which should be changed:

**Telephone**

1234 ВХОД +– H

**Tracker**

StarLine

External input:
SMS, when switching on; monitoring
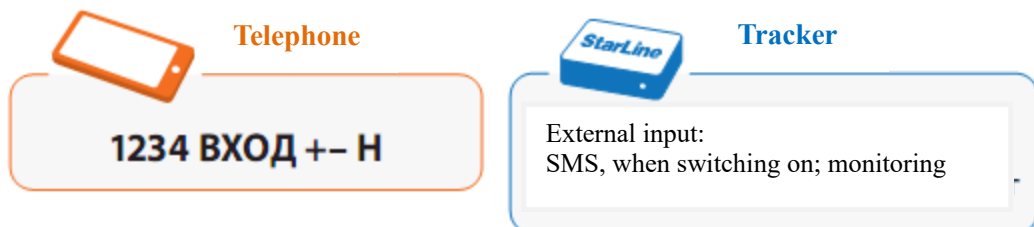
To get the information about the current external input settings, send any of the following queries to the tracker number:

| **** | **IN?** |
|---|---|

| **** | **ВХОД?** |
|---|---|

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37).

# External Output Devices Connecting

 **ATTENTION!** *Before connecting devices to the output of the tracker, check the value of the current, which will flow through this circuit. The maximum permissible loading capacity of the external output is 200 mA. If it is required to switch heavy currents, you should use an additional relay. Failure to observe this rule may cause the mortality of the tracker.*

The additional channel is arranged by the 'bare collector' diagram, and the external output connects to the ground, when it is activated. The black wire should be connected to the ground at that.

The control of the external output is carried out by sending the following SMS commands to the tracker number:

| **** | **K [status]** (eng) |
|---|---|
|  | **OUT [status]** |

| **** | **К [status]** (rus) |
|---|---|
|  | **ВЫХОД [status]** |

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37);

**[status]** – The command switching on/off the external output;

- + (plus) – switching on the external output;
- - (minus) –switching off the external output.

| | Telephone | | Tracker |
|---|---|---|---|
| | 1234 K + | | External output is on |

| | Telephone | | Tracker |
|---|---|---|---|
| | 1234 K – | | External output is off |
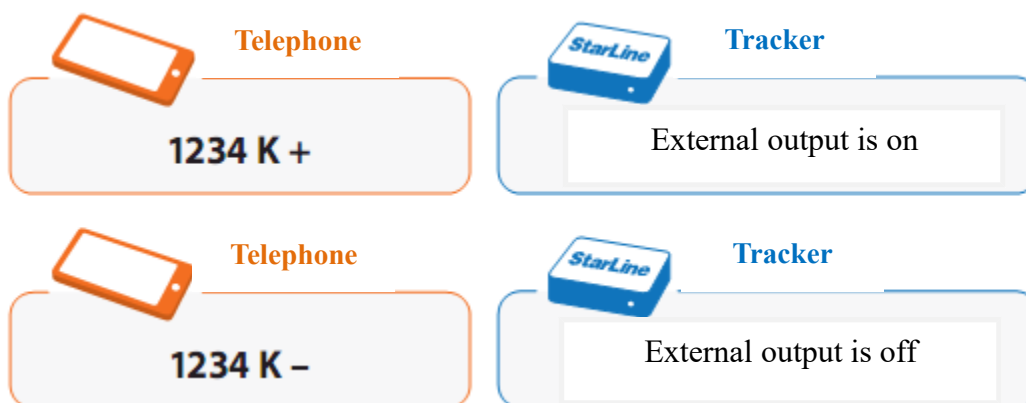
The following SMS commands allow you to switch on the external output for a certain time (beginning from the moment of receiving the message by the tracker):

| **** | K [interval] (eng) |
|---|---|
| | OUT [interval] |

| **** | К [интервал] (rus) |
|---|---|
| | ВЫХОД [интервал] |

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37);

**[interval]** – The time of switching on the external output in **seconds** (number from 1 to 9999).

| | Telephone | | Tracker |
|---|---|---|---|
| | 1234 K 500 | | External output is on, 500 sec. left |

*The tracker will be active as long as the external output will be on.*

Switch the tracker to the alert mode or enable the monitoring, that the commands switching on the external output would be executed. The tracker won't transit to the sleeping state from the active state and will always be ready to execute an incoming command.

To get the information about current settings of the external output and the remained time of the operation, send any of the following queries to the tracker's number:

| **** | **K?** (eng) |
|---|---|
| | **OUT?** |

| **** | **К?** (rus) |
|---|---|
| | **ВЫХОД?** |

where **** - the current access password (it is not necessary to indicate it, when sending from the owner's number, see Page 37).

# Installation and Operation Recommendations

## Installation Recommendations

The tracker should be placed so, that its cover (a side with the 'StarLine ®' logo) would be directed towards the sky. During the installation, the tracker body should not be obscured with metal objects and coverings. The GLONASS/GPS signal passes through the glass, plastic, decorative door trim, but doesn't pass the metal body, metalized tinted coating and other metal objects.

The tracker is made in the damp proof body. Though, when installing in a place that is not water-protected, take measures for the additional sealing of the body of the tracker – place it into a hermetic bag, film etc. Provide an additional protection of the connector for the external power supply and external devices.

> **ATTENTION!** *Don't place the tracker near intensively heated parts of the car. Remember that lithium batteries are installed in the tracker, which can ignite at a temperature above 60°C.*

The probability of finding and disabling the tracker by violators decreases, when it is installed in the most uninspected and hidden place. In any case, before the final installation, check the stability of determination of the GLONASS/GPS coordinates.

To provide the detection protection by a nonlinear junction locator (special device, which allows to detect any semiconductor equipment even in the off-state), it is recommended to place the tracker near the factory electronic units, such as controllers of the engine, xenon light units, audio amplifiers and so on.

## Operation Recommendations

During the initial configuration, make sure that the tracker executes your command correctly. Try to remember the most necessary commands. We recommend you to carry the instruction sheet on basic commands.

You can always get to know basic commands for controlling the tracker, having sent the SMS message to its number:

**Telephone**

**1234 ?**

where **1234** – the current access password (it can be changed).

Then you should switch the tracker to the normal mode and set the activation interval. We recommend you to use the interval of 24 hours that will allow the tracker to operate with one battery pack up to 2 years. When reducing the activation interval, the time of the autonomous operation of the tracker decreases. You can calculate the service life by yourself on the basis that one battery pack is sufficient for 500 full activity cycles with the GLONASS/GPS coordinates determination and sending them by the SMS messages to the owner.

In the sleeping state, the tracker almost doesn't consume the battery energy. In the audio control mode, the consumption is maximum, in this case, the capacity of the batteries will be enough only for a few hours.

*At the external power supply of 8…33V, the time of operation of the tracker is not limited, regardless of the selected operation model till the moment of disconnection of the external power supply.*

The tracker checks the state of the account on the number periodically of its SIM card, and, if the amount becomes less than one indicated in the settings, sends the SMS warning about the low balance to the owner at the next communication session. At each activity session, the tracker also checks the state of its batteries, and, if their service life is near the end, sends the warning SMS message to the owner (at the battery power only).

The operation of the tracker in winter conditions has features related to the reduction of the capacity of lithium batteries at sub-zero temperatures. At the frost below -25°C, the capacity of the batteries can decrease to the level, at which energy-intensive operations cannot be performed, i.e. switching-on of the GSM-module and the receiving/sending of the SMS. Therefore, there can be gaps in sessions of communication and sending of the SMS messages to the owner at such temperatures. The communication will be restored as soon as the ambient temperature rises.

When sending commands to the tracker, take into account that the time of undelivered the SMS messages retention by the operators is usually equal to 24 hours. So, if the interval of your tracker activation is more than 24 hours, the command message should be resent, if the tracker did not respond within 24 hours.

If you expect that you will need the operative determination of the tracker coordinates or quick execution of your commands in the near future, send the SMS command to accelerate the actuation intervals beforehand.   Usually, it is enough to set the interval at the level of 30-59 minutes, for example:

**Telephone**

**1234 B1 30M**

where **1234** – the current access password (it can be changed).

In the normal mode, the tracker remains active within 5 minutes after any command execution. This allows you to change quickly an error command and/or give several commands in succession or enable the audio control mode.

# Maintenance

If it is necessary to replace the SIM card, carefully disassemble the tracker body, having unscrewed 6 screws. Remove the SIM card, installed in the special connector, and insert a new one as displayed on the figure. The new SIM card should be fully operable and have a positive balance on the account. The PIN code query should be disabled in the SIM card settings.

1     UNBLOCK THE HOLDER
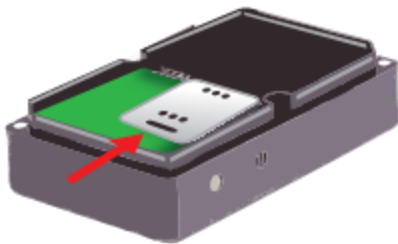
2     OPEN THE HOLDER

3     INSTALL THE SIM CARD

4     CLOSE AN BLOCK THE HOLDER
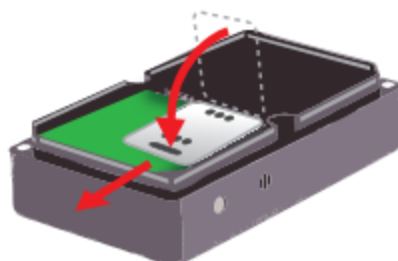
**ATTENTION!** *You should install and remove the SIM card, when the tracker is fully de-energized only, after removing the batteries.*

*Before installing the SIM card that IS NOT FROM THE TRACKER SET, be sure to execute the following operations:*
*1. Insert this SIM card to any mobile phone.*
*2. Check that your phone number (which will be used as the owner's number) is determined, when calling to this SIM card.*
*3. Disable the PIN code query by switching on in the SIM card settings.*
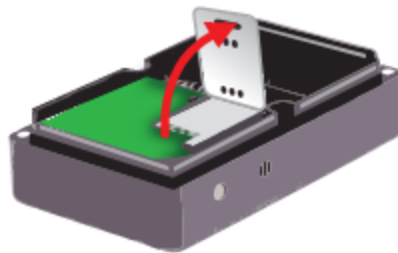*4. Make sure that the SIM card balance is positive.*
*5. It is advisable to enable services of the intranet and international roaming: in this case, the transmission of coordinates from anywhere in the world will cost you much less.*

The batteries are included in the delivery set and are located in the relevant compartment inside the body. To replace the batteries, carefully disassemble the tracker body, having unscrewed 6 screws. Remove these batteries and install new batteries, observing the polarity.

*The tracker can operate, using only two batteries. The type of the applied batteries is lithium, Model CR123A. When replacing the batteries, it is advisable to install the batteries from the same manufacturer and of the same model, which are taken from the same batch. This will allow you to use their capacity as efficiently as possible.*

StarLine M17 Tracker

# Your Actions in case of a Car Theft

If your car was stolen, promptly inform the nearest police office and immediately start the search activities.

**1**. Immediately send the SMS with the command for the acceleration of the actuation intervals to 15 minutes and the GLONASS/GPS coordinates sending in the text format and wait for the response SMS message about the execution of this command.

**Telephone**

**1234 B1 15M T**

where **1234** – the current access password (it can be changed).

**DON'T SEND** any commands until the SMS message about the execution of this command comes! The time of the unaccepted SMS retention differs at different operators, but it is not less than 24 hours. Therefore, you may send repeated commands duplicating the first command, if the tracker doesn't response.

 **2**. If the GLONASS/GPS coordinates were received, determine the location of the car, having entered them to the line of the search systems Google Maps http://maps.google.ru or Yandex Maps http://maps.yandex.ru. For example, N 59.96338 E 30.35051.

If your phone or smartphone supports the web browsing, you can use the mode of receiving the coordinates in the web-links form. In this case, you just have to go to the fragment of the map with the indication of the car location, using the link received in the SMS message. If necessary, you can set that messages would come in the format of the text and link at the same time.

Telephone

Telephone

**1234 B1 15M L**

**1234 B1 15M LT**

where **1234** – the current access password (it can be changed).

**3**. If the GLONASS/GPS coordinates were not received, the tracker will determine the approximate location by identifiers of 4 basic mobile communication stations (LBS technology) nearest to it. The accuracy of the location determination by this method is lower than by GLONASS/GPS, and is 100-150 meters in town and 1-30 km out in the country. In order to determine the coordinates by this method, you should enter the MMC, MNC, LAC and CID data, received from the tracker, in the relevant fields of the form. Whereupon, the coordinates will be displayed in the standard format, and you can view them on Yandex and Google maps, using the relevant links.

**4**. Having determined exact coordinates or search area, inform them to law enforcement agencies and go to the place. Secure your safety and provide yourself with the armed support for a possible resistance from the hijackers. If the GLONASS/GPS coordinates were not determined, the car most likely is in garage or another shelter, or the jamming of the GLONASS/GPS signal is activated. In this case you will know only the approximate search area.

To define the search area more accurately, if the visual inspection had no effect, you can activate the acoustic communication mode. To do this, activate the audio control mode, establish a connection with the tracker and sequentially comb the specified search area, producing loud sounds periodically (for example, you can  use the horn of the car, audio alarm, knock at doors of closed garages etc.). As soon as you hear the repetition of your sounds with a delay through the phone, then you are almost near the target and further you just need to determine it more precisely.

**5**. If the search by approximate coordinates had no effect, set the increased the actuation interval again (for example, 2 hours) and wait for the moment, when the tracker succeeds to send the SMS message with the exact coordinates, as sooner or later, hijackers will have to remove the car from the shelter or garage. Be ready to go to the specified place immediately.

Don't lose hope to find the car, even if there are no messages from the tracker within the first several days. Probably, the car was placed to an underground garage, or the GSM signal jamming is activated. As soon as the car is taken outdoors, or the jamming is deactivated, the tracker will let you know about itself. When properly configured, the batteries can serve up to 2 years.

# Reference Information

## SMS Commands Table

**\*\*\*\*** - *current password to access the tracker. The commands, marked with the '●' symbol, should be* always indicated together with the password, when sending from the owner's number.

| Operation | Example of command | | \*\*\*\* |
|---|---|---|---|
| | **Latin** | **Cyrillic** | |
| Receiving the message with the standard format coordinates | \*\*\*\* (password) | \*\*\*\* (password) | |
| Receiving the message with the extended format coordinates | \*\*\*\* # <br> \*\*\*\* **FULL** | \*\*\*\* # <br> \*\*\*\* **ПОЛН** | |
| Enabling the alert mode | \*\*\*\* **!** <br> \*\*\*\* **A** <br> \*\*\*\***ALERT** | \*\*\*\* **!** <br> \*\*\*\* **А** <br> \*\*\*\***ТРЕВОГА** | |
| Enabling the normal mode | \*\*\*\* **-** <br> \*\*\*\***N** <br> \*\*\*\***NORM** <br> \*\*\*\***NORMAL** | \*\*\*\* **-** <br> \*\*\*\* **Н** <br> \*\*\*\***НОРМ** <br> \*\*\*\***НОРМАЛЬНЫЙ** | |
| Enabling the audio control mode | \*\*\*\* **C** <br> \*\*\*\* **CALL** | \*\*\*\* **С** <br> \*\*\*\* **ЗВОНОК** | |
| Movement notifying mode control | \*\*\*\* **D+** | \*\*\*\* **Д+** | |

## StarLine M17 Tracker

### StaM17 n

| | | | |
|---|---|---|---|
| Movement Notifying Mode Parameters settings | ****D SM60 | ****Д СМ60 | ● |
| Owner's Number  settings | ****+<br>****+79112345678 | ****+<br>****+79112345678 | ● |
| Password settings | ****P 5678<br>****P + | ****P 5678<br>****P + | ● |
| Current Date and Time settings | ****T<br>**** T 12:00<br>     14.05.2012<br>+4 | ****T<br>**** T 12:00<br>     14.05.2012<br>+4 | ● |
| Date, Time and Operation Modes settings for the Watch Dog Timers | ****B1 12:00<br>     15.08.2012 10H<br>     LT<br>****B2 4.10.12<br>     30M K | ****B1 12:00<br>     15.08.2012 10Ч<br>     ЛТ<br>****B2 4.10.12<br>     30M К | ● |
| Messages Format settings | ****F LT | ****Ф ЛТ | ● |
| Messages Code Selecting | ****ENGLISH<br>****ENG<br>****RUSSIAN<br>****RUS | ****АНГЛИЙСКИЙ<br>****АНГЛ<br>****РУССКИЙ<br>****РУС | |
| Balance Inquiry Number and Warning Threshold  settings | ****M<br>****M *100# 50 | ****М<br>****М *100# 50 | ● |
| Internet Access settings | ****I<br>****I internet.<br>     mts.ru<br>mts mts | ****И<br>****И internet.<br>     mts.ru<br>     mts mts | ● |
| Tracker Name settings | ****NAME Toyota<br>Camry | ****NAME Toyota<br>Camry | ● |

| Tracker Phone Number settings | ****MAYAKNUM +79052345678 | ****НОМЕРМАЯКА +79052345678 | ● |
|---|---|---|---|
| Notification About the External Power Supply State Change settings | ****POWER ++ A M+ | ****ПИТАНИЕ ++ A M+ | ● |
| Notification about the External Input State Change settings | ****IN ++A M+ | ****ВХОД ++A M+ | ● |
| External Output Control | ****K+ <br> ****OUT 500 | ****K+ <br> ****ВЫХОД 500 | |
| Monitoring Parameters settings | ****MON 10 | ****МОН 10 | ● |
| Data Transmission Mode Control | ****MON + | ****МОН + | |
| Current Query settings | ****PARAMS | ****ПАРАМЕТРЫ | |
| Factory settings Resetting | ****RESET | ****СБРОС | ● |
| Firmware Update | ****FWUPDATE | ****ПЕРЕПРОШИВКА | ● |
| Service Data Query | ****INFO | ****ИНФО | |
| USSD-Query Sending | ****USSD#100# | ****УССД#100# | |
| Tracker Operation Report Sending | ****REPORT | ****ОТЧЕТ | |
| Tracker Restarting | ****RESTART | ****ПЕРЕЗАГРУЗКА | ● |
| Getting the Information about Control Commands | ****HELP <br> ****? | ****ПОМОЩЬ <br> ****? | |
| Getting the Information about Configuration Commands | ****?? | ****?? | |

# Control Light-Emitting Diode Indication

The tracker is equipped with the control light-emitting diode built in the activation button. If the tracker is activated by pressing the button, the light-emitting diode will show the current operation mode and state of the tracker. The possible modes of operation of the light-emitting diode are given below:

| Indication | Operation mode |
|---|---|
| 1 short flash | Active mode, the GLONASS/GPS modules are switched on. The tracker is in the mode of waiting the new SMS commands or a call to enable the audio control. |
| 2 short flashes | The firmware of the tracker is absent or damaged. It is necessary to check the availability of the firmware update and, if necessary, update the firmware. |
| 3 short flashes | There is no SIM card in the tracker. Remove the cover of the tracker, remove the batteries and insert a valid SIM card. |
| 1 long flash, 1 short flash | No GSM network is found. Place the tracker to the area of the mobile operator coverage. |
| 1 long flash, 2 short flashes | The battery is discharged. It is necessary to replace the batteries urgently! |
| 2 long flashes, 1 short flash | Receiving the SMS message by the tracker |
| 2 long flashes, 2 short flashes | Sending the SMS message by the tracker |

# Mobile Communication Operators Table

| Mobile operator | Balance query | settings of the GPRS access point | | |
|---|---|---|---|---|
| | | APN | Login | Password |
| MTS | *100#, #100# | internet.mts.ru | mts | mts |
| Beeline | *102#, #102# | internet.beeline.ru | beeline | beeline |
| MEGAFON | *100# | internet | | |
| TELE2 | *105#, #105# | internet.tele2.ru | | |
| Factory settings | *100# | internet | | |

# Time Zones List

| UTC | Settlements |
|---|---|
| +3 | Kaliningrad, Kiev, Kharkov, Minsk |
| +4 | Moscow, Saint Petersburg, Nizhniy Novgorod |
| +5 | Aktau, Aktyubinsk, Uralsk |
| +6 | Yekaterinburg, Perm, Ufa, Chelyabinsk, Almaty |
| +7 | Novosibirsk, Omsk, Tomsk |
| +8 | Abakan, Krasnoyarsk, Novokuznetsk |
| +9 | Irkutsk, Ulan-Ude, Bratsk |
| +10 | Blagoveshchensk, Chita, Yakutsk |
| +11 | Vladivostok, Khabarovsk, Yuzhno-Sakhalinsk |
| +12 | Anadyr, Magadan, Petropavlovsk-Kamchatsky |

# Possible Troubles and Remedies

| Problem description | Possible reason | Remedies |
|---|---|---|
| When sending a command, the following response comes: 'Incorrect command' | Command entries error | Check the correctness of the record and re-enter the command |
| The tracker doesn't transit to the sleeping state, notwithstanding that the normal operation mode is set. | 1. The tracker does not have time to transit to the sleeping state, as commands are sent to it. | 1. Don't send commands to the tracker within 5 minutes. |
| | 2. The period of activation of one of watch dog timers is less than 5 minutes. | 2. Check the watch dog timers settings and change them, if required. |
| The tracker doesn't determine the GLONASS/GPS coordinates. | 1. The tracker is shielded with metal objects or is outside the line of sight of the sky. | 1. Take the tracker to another place, free from the shielding, with the line of the sky sight. |
| | 2. There is a source of the strong radio interference in the GLONASS/GPS range near the tracker. | 2. Try to get the GLONASS/GPS coordinates in another place. |
| | 3. The tracker antenna is not directed towards the sky. | 3. Orient the tracker in the right direction. |

| The error of determination of the GLONASS/GPS coordinates is 50-500 meters. | The tracker has found only 3 GLONASS/GPS satellites or receives a signal reflected from high buildings. | Take the tracker to a place with a more stable reception of the GLONASS/GPS signal or direct it towards the sky more precisely. |
|---|---|---|
| The tracker doesn't response to the SMS commands sent to it. | 1. The batteries are discharged. | 1. Press the button of the tracker and check the indication of the LED. In case of displaying 1 long flash and 2 short flashes or in their absence, replace the batteries with new batteries. |
| | 2. Wrong password. | 2. Specify the correct password in the message. If you forgot it, reset the settings to the factory settings by using the button. |
| | 3. The time of awakening has not come yet. | 3. Wait for the time of awakening or switch the tracker to the active state by pressing the button. |
| | 4. The tracker is outside the coverage area of the cellular communication operator. | 4. Wait for the registration of the tracker in the cellular network. |
| | 5. The money on the account of the SIM card ran out. | 5. Recharge the account |
| | 6. The tracker is faulty. | 6. Contact the service center. |

| The batteries run down quickly. | 1. The continuous activity 'alert' mode is set. | 1. Switch the trackertracker the energy saving 'normal' mode (or connect to the external power supply). |
|---|---|---|
| | 2. The repeated use of the listening mode. | 2. Don't use the audio control mode without an absolute necessity (or connect to the external power supply). |