



**SMART
TRACKER**

StarLine M66

USER MANUAL

StarLine

M66

GSM GPS tracker

User manual instruction


EAC

CE

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Attention!

Prior to use security system carefully read this manual paying special attention to the sections marked  and check whether this security system is suitable for your car, considering car manufacturer's requirements and car operation manual.

The security system is a complicated technical device implying connection to the car circuits related to engine operation.

The security system must be installed only by skilful car technicians.

Installation, programming, maintenance and repair of the security system shall not be carried out by persons who are not qualified specialists and have not passed training and examined in safety rules.

During security system programming, the configured settings must not contradict the requirements of the car operation manual.

The user bears full responsibility for damage incurred to people, animals and assets as a result of inappropriate use of the security system or use with violations of the safety requirements specified in this manual.

The manufacturer shall not be responsible for losses and injuries caused by failure to observe the safety rules and requirements outlined in this manual.

To avoid possible misunderstandings, keep the documents enclosed to the security system at sale. If there is no sale (purchase) date specified, the warranty period is counted from the date of security system manufacture.

If your security system has a remote key or a wireless tag:

- Do not carry remote key or tag on a same bundle with car keys
- Always switch over the system to service mode when handing a car over for maintenance or washing. Do not hand tags and remote keys over to third parties to prevent unauthorized access to security functions
- Do not leave remote key or tags in areas accessible to children and animals
- Do not let liquids seeping into remote key
- If remote key display shows an icon of a remote key battery discharge, take care of replacing a battery.
- Store a spare battery in a car in the factory package.

Safety precautions during charging of your car's storage battery

Remember that any battery charging process implies supply of voltage exceeding the rated 12 V to the storage battery and accordingly to the car circuit, which may damage car electronic equipment and additional installed equipment in your car.

Do not use charging and starting/charging devices for storage battery charging directly on the car without disconnecting the storage battery terminals from the car circuit in the following modes:

- rapid charging by increased current («boost» or similar modes)
- various START modes intended for engine starting
- in the storage battery 24 V charging mode

Never use starting and charging devices for engine start without a connected storage battery and with connected inoperable storage batteries (short circuited files, broken plates etc.)

Never use inoperable charging devices, 24 V charging devices and devices not intended for storage battery charging, e.g., welding invertors.

All the aforesaid devices and modes may cause uncontrolled supply of increased voltage over 25 V and up to 60 V to the car circuit and cause car electronics and security system components failure.

The light-up method should not be used for storage battery charging. Even the described «safe» light-up methods are safe only for the «donor» car. Connection and disconnection of a fully discharged or inoperable storage battery on your car with the engine operating may cause failure of the electronic devices of your car and the car alarm due to a short circuit or surges of increased voltage occurring during storage battery connection and disconnection.

If the aforesaid devices and modes are used, the car owner shall be responsible for damage of the electronic equipment.



Observe the technology for safe storage battery charging!

Before charging, the storage battery terminals shall be disconnected from the car circuit. After that the storage battery charging process can be started. After charging, connect the storage battery to the car circuit.

General description

StarLine M66 GSM GPS smart tracking device (hereinafter referred to as the tracker) is designed to monitor location and routes of vehicles with 12/24V on board voltage. Also it can immobilize vehicle remotely with owner command via text message or mobile App (Anti-hijack option).

For authorization you can use a tag or smartphone that supports the BLE communication protocol and registered in the tracker.

The system is controlled with SMS commands, wireless tag, from the StarLine mobile application or from the personal account at starline.online. To enter the personal account use the login and password given on the owner's plastic card included in the delivery set.



Owner ID card

Login

Emergency disarm code

Password

Service (Valet) code

Login and password
for access to starline.online
private account

The package includes a plastic card, which indicates:

Login and password — need to sign in your personal account at starline.online.

- **Emergency disarm code** — to override security mode and unlock engine start if enabled.
- **Service code** — to enter and program the main unit settings in StarLine Master software.



ATTENTION! Do not share an emergency override code with anyone.

The wireless tag



ATTENTION! The tags in factory package are in transport power saving mode, i.e. off. This mode is indicated with yellow and red LED flashing on a tag button push. Before use push the button several times until LED turns to green flash on every push.

Push the tag button once shortly to check connection with the tracker main unit. Double LED flash of any colour (depending on current mode) confirms connection established. 1 flash means a tag is out of stable connection range or not registered.

Main unit LED light indication

Within an hour after power On the LED lights up permanently, then it turns to flashing once per 10 sec.

| LED colour | Meaning |
|------------|--|
| red | Power is on, no connection with server |
| blue | Server connection is established, GPS-GLONASS coordinates are not received |

| LED colour | Meaning |
|------------|--|
| green | Server connection is established, GPS-GLONASS coordinates are obtained |
| violet | Tracker is connected to computer with StarLine Master started |

Tag battery replacement

To replace a tag battery open the housing neatly with a thin flat item. Put a new CR2032 type battery inside, observing the right polarity (negative down and positive up). After battery replacing tag is ready to operate.



Technical specification

| Parameter | Value |
|--|---|
| GSM standard | 2G Quad band GSM GPRS 850/900/1800/1900 MHz |
| SIM cards quantity | 1 nano SIM card |
| GSM antenna design | integrated |
| Radio short-range channel | Bluetooth Smart |
| External interfaces | <ul style="list-style-type: none">• CAN• 1 USB• 1 universal input• 1 output type OC (open collector) |
| Range of measured voltage (analog input) | 0-28V (12bit) |
| GPS/GLONASS receiver sensitivity | <ul style="list-style-type: none">• -148dBm — “cool” start• -163dBm — “hot” start• -165dBm — in tracking mode |
| Input voltage | 8-32V (both 12V and 24V) |
| Operating temperature range | -40 ... +85 °C |
| Main unit dimensions | 64x44x13,5 mm |
| Weight | 33 gr |

Operation modes

The tracker is controlled with SMS text messages, wireless tag, personal account at starline.online or StarLine mobile App.

Normal Mode

In normal mode tracker allows to drive when registered owner ID tag is detected in operation range. If tag is not in range then engine shall be blocked and SMS alert sent to owner phone number. Tracker is linked to only one the first detected tag in a certain moment.

Tag operation range is set at max distance by default. Owner can adjust the range in App or at starline.online.

If owner ID tag is occasionally lost or discharged then switch tracker to Service mode to allow drive with SMS text command **51**.



In Service mode all security features, incl. engine blocking, are disabled. Do not forget to switch Service mode off then to enable security options back.

If tag is lost in a trip for more than 1 minute, the SMS message will be sent to owner number. ATTENTION!

BLUETOOTH-TAG IS LOST IN A TRIP. IGNITION ON.

If owner is away of vehicle at the moment, then it is recommended to activate Anti-hijack mode to safely block an engine.

Tag loss alert can be disabled at starline.online account.



In Normal mode engine can be blocked with remote command only (see Anti-hijack mode).

Anti-hijack mode

Anti-hijack mode is intended to secure driver from robbery on a trip. Once the mode activation command is received the tracker shall block engine for 30 sec at every drive attempt. For safety reasons blocking is activated at a speed below 30 km/h.

The mode is activated with one of following methods:

- 1) SMS command **31**. In response to the command, a message with a confirmation code will be sent to an owner and must be sent back with SMS message **31 YYYY** (where YYYY is the confirmation code) to the system number within 10 minutes.
- 2) command from the mobile application StarLine.

To return the tracker to normal operation and to unlock the engine, send an SMS command **30 XXXX** (where xxxx is emergency disarm code) or a command from the StarLine mobile application (you also need to enter emergency disarm code).

If a wrong emergency disarm code is entered 3 times, then code entry shall be suspended for 15 min with corresponding SMS alert submitted to an owner phone.

After exit from Anti-hijack mode device switches to Disarmed mode and remains in it until tag is detected and then lost in operating range.

Also an engine can be remotely blocked with SMS command **31** while vehicle is on parking, for example, when tag loss alert received or vehicle is grabbed along with a tag.

Service (Valet) Mode

Service mode is used for temporary security features deactivation and inhibiting new tags/registration, i.e. while vehicle maintenance or wash.

Service mode is activated with one of the following methods:

- 1) push and hold a tag button within 3 sec until LED lights up yellow
- 2) SMS text command **51**

- 3) command from StarLine App
- 4) command from starline.online account

Switching to service mode will be indicated with yellow LED light.

Service mode is disabled with one of the following methods:

- 1) push and hold a tag button withing 3 sec
- 2) SMS text command **50**
- 3) command from StarLine App
- 4) command from starline.online account

After exit from Service mode device switches to Disarmed mode and remains in it until tag is detected and then lost in operating range.

Devices registration mode

Registration mode is used to pair new wireless devices and components: tags, smartphones, R6 relay units.



Switching from Service mode to Registration mode is prohibited!

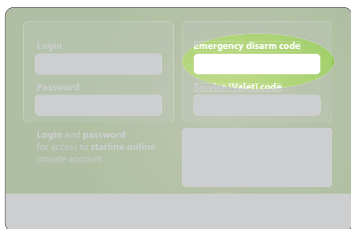


ATTENTION! All tags and smartphones must be registered in one cycle. Total up to 5 devices can be paired. All previously

registered tags and smartphones will be deleted from memory (except for relay units R6 and R6 Eco).

Switching to registration mode:

- 1) Switch device to Normal mode
- 2) Send SMS text command «reg xxxx», where xxxx - emergency disarm code from personal ID card.



The image shows a registration interface with a light green background. On the left, there are two input fields labeled 'Login' and 'Password'. Below them is the text 'Login and password for access to starline.online private account'. On the right, there are two input fields: the top one is labeled 'emergency disarm code' and is highlighted with a green oval, and the bottom one is labeled 'Service (Valet) code'. Below these fields is a larger, empty rectangular area.

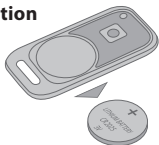


If a wrong emergency disarm code is entered 3 times, then code entry shall be suspended for 15 min with corresponding SMS alert submitted to an owner phone.

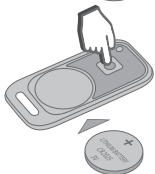
- 3) Wait for SMS confirmation of entry to registration mode.

Tags and smartphones registration

1) Remove battery from tag.



2) Push and hold the tag button and install battery back. The tag LED will light up red.



3) Release the button and check presence of a red flashes series for 10 seconds.



4) Successful pairing shall be confirmed with one green LED flash and SMS message. If tag pairing failed then LED lights up red.

5) Repeat steps 1 to 3 for the remaining tags.

6) Pair a smartphone with use of StarLine mobile App. Pairing code is 000000. Successful pairing shall be confirmed with SMS message.



The driver authentication and control with smartphone via Bluetooth Smart protocol is available on iPhone with iOS 9 and above (not for tabs). Not available for Android in current Bluetooth hardware version.

- 7) Registration mode is switched off automatically in 5 min or at ignition On.
- 8) Exit from the device registration mode will be confirmed by SMS message with the number of registered devices.

Registration of StarLine R6 wireless relay unit:

1. Switch ignition Off.
2. Disconnect BAT, OUTPUT and INPUT R6 wires from vehicle circuits.
3. Switch M66 to Registration mode.
4. Interconnect R6 OUTPUT and INPUT wires.
5. Apply input power (connect BAT to +12V and GND to «-»).
6. Successful registration will be confirmed in 10 sec.
7. Disconnect BAT from +12V and disconnect OUTPUT and INPUT wires.
8. Make connections according to wiring diagram and check R6 operation.



After exit from Registration mode M66 switches to Disarmed mode and remains in it until tag is detected and then lost in operating range.

Satellites tracking

Tracking is carried out in GPS and GLONASS navigation systems. Vehicle position and routes are monitored at starline.online account or mobile App. Location can be requested via SMS.

Tracking is active in all operation modes.

GSM control commands

Tracker can be controlled and configured with SMS text commands, sent from recorded M1-M4 master phone numbers.

To record M1 owner master phone number and GSM password, send SMS text command **XXXX M1 YYYY TEL**, where:

XXXX - service code from owner ID card;

YYYY - GSM password;

TEL - phone number in international format beginning with +, to be recorded as M1.

All SMS commands from M1 number can be sent

without GSM password. Commands sent from M2-M4 phones must begin with preset GSM password.

For example, to request a vehicle location submit command 1234 40, where: 1234 - is a sample (default) GSM password, 40 - command code.

The alerts and permissions rules for M2-M4 phones are managed in starline.online personal account.

The list of SMS commands is given in the table.

| SMS command text | Command meaning |
|------------------|---|
| 30 XXXX | OFF the Anti-hijack mode , where XXXX — emergency disarm password |
| 31 | ON Anti-hijack mode |
| 40 | GPS positioning request |
| GPS | |
| 41 | Car state request |
| AUTO | |
| XXX | SIM card balance, where XXX – operator USSD balance request code |
| 50 | Valet mode disable |
| S- | |
| 51 | Valet mode enable |
| S+ | |

| SMS command text | Command meaning |
|------------------|--|
| REG XXXX | Device registration mode enter, where XXXX— emergency disarm password |
| 05 | Registered devices list request |
| REG? | |
| 45 | SIM-card balance and GSM+GPRS connection level request |
| BALANCE | |
| MONEY | |
| 8N | Flexible logics program enable, where N – program number, informed by installer. Flexible logics allows to add new functions, that are not available in security system and car default settings. Flexible logics programs are to be performed by installer specialist. |

Additional SMS commands

| SMS command text | Command meaning |
|------------------|---|
| 06 | GSM-password request |
| GSMPSW? | |
| 07 | Request for the telephone numbers, recorded in tracker memory |
| TEL | |
| PHONES | |

| SMS command text | Command meaning |
|------------------|---|
| 09 | Request on GSM connection level, battery voltage, system software version |
| INFO | |
| 0000XXXX | Record new guest GSM - password, where XXXX - new password |
| 0000 XXXX | |
| GSMPSWXXXX | |
| GSMPSW XXXX | |
| 0050XXXXYYYY | Record new emergency disarm password, where XXXX- old password, YYYY- new password |
| 0050 XXXX YYYY | |
| PINXXXXYYYY | |
| PIN XXXX YYYY | |
| 0001XYXXX | Record new M1 tel. number, where X – alarm call alert setup (1 – enable alert, 0 – disable alert), Y – alarm SMS alert setup (1 – enable alert, 0 – disable alert), XXX- new tel. number in international format +XXXXXXXXXXXX. M1 owner tel. number cannot be deleted. |
| 0001 XY XXX | |
| M1XYXXX | |
| M1 XY XXX | |

| SMS command text | Command meaning |
|------------------|--|
| 0002XYXXX | Record new M2 tel. number, where X – alarm call alert setup (1 – enable alert, 0 – disable alert), Y – alarm SMS alert setup (1 – enable alert, 0 – disable alert), XXX- new tel. number in an international format +XXXXXXXXXXXX. If M2 tel. number is not entered, so M2 tel. number will be erased. |
| 0002 XY XXX | |
| M2XYXXX | |
| M2 XY XXX | |
| 0003XYXXX | Record new M3 tel. number, where X – alarm call alert setup (1 – enable alert, 0 – disable alert), Y – alarm SMS alert setup (1 – enable alert, 0 – disable alert), XXX- new tel. number in an international format +XXXXXXXXXXXX. If M3 tel. number is not entered, so M3 tel. number will be erased. |
| 0003 XY XXX | |
| M3XYXXX | |
| M3 XY XXX | |
| 0004XYXXX | Record new M4 tel. number, where X – alarm call alert setup (1 – enable alert, 0 – disable alert), Y – alarm SMS alert setup (1 – enable alert, 0 – disable alert), XXX- new tel. number in an international format +XXXXXXXXXXXX. If M4 tel. number is not entered, so M4 tel. number will be erased. |
| 0004 XY XXX | |
| M4XYXXX | |
| M4 XY XXX | |

| SMS command text | Command meaning |
|------------------------|--|
| ZZZ9900PINXYXXX | Emergency M1 number change, where: ZZZZ - GSM password; PIN – emergency disarm password, X – alarm call alert setup (1 – enable alert, 0 – disable alert), Y - alarm SMS alert setup (1 – alert enable, 0 – alert disable); XXX— new tel. number. Tel. number should begin with '+', then country code and local tel. number (not less than 5 digits). This command can be sent from any tel. number. |
| ZZZ 9900 PIN XY XXX | |
| ZZZZEM1PINXYXXX | |
| 00491 | Disable GPS |
| GPS- | |
| 00492 | Enable GPS |
| GPS+ | |
| GPS? | GPS status request |
| 00550 | Disable GPRS |
| GPRS- | |
| 00551 | Enable GPRS |
| GPRS+ | |
| GPRS? | GPRS connection status request |
| 00520 | Disable turning to roaming SMS - alert |
| 00521 | Enable turning to roaming SMS - alert |

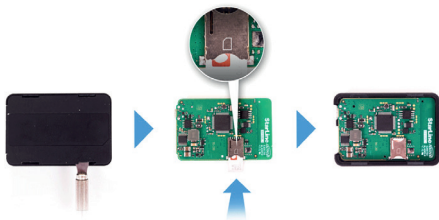
| SMS command text | Command meaning |
|------------------|---|
| 00522 | Enable turning to roaming SMS – alert with automatic GPRS disable |
| 00523 | Enable GPRS in roaming |
| 00524 | Disable GPRS in roaming |
| 009401 M2+ | Enable all commands for M2 tel. number, allowed for M1 |
| 009400 M2- | |
| 009500 GUEST+ | Enable control commands from the phones, not registered in memory |
| 009501 GUEST- | |
| 00961 M1PSW+ | Require password from M1 tel. number |
| 00960 M1PSW- | |
| | Do not require password from M1 tel. number |

| SMS command text | Command meaning |
|-------------------------------|--|
| <p>APN NAME LOGIN PSW</p> | <p>Record internet access APN for the active SIM card, where: NAME – APN address, mandatory parameter (for example, internet.mts.ru) LOGIN PSW – login and password for access, not mandatory parameters (for example, mts mts) If no any parameter is specified, so APN settings will be erased.</p> |

Tracker installation and connection

SIM card installation

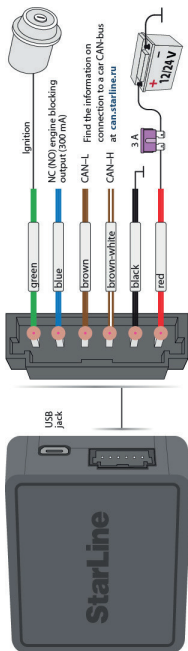
Open the tracker housing with a flat metal object and insert the SIM card into the slot located on the board. After this, install the PCB back into the case and close the case cover.



Tracker placement recommendations

The tracker must be placed so that its cover (side with the StarLine logo) is pointing towards the sky. When installing the body of the tracker must not be obscured by metal objects and coatings. The GLONASS + GPS signal of satellites passes through glass, plastics, decorative door paneling, but does not pass through a metal body, metallized tinting and other metal objects.

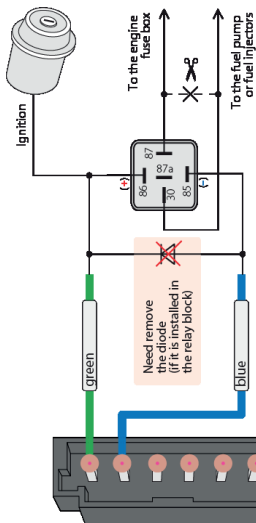
Connection diagram



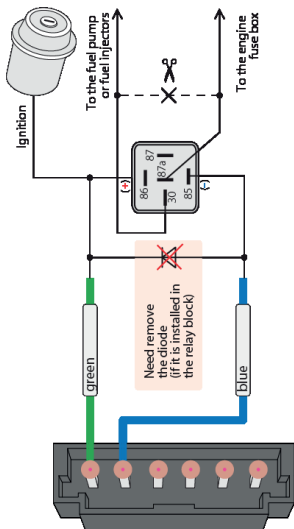
Black wire – connection to the ground (-). This connection must be performed first. For connection it is recommended to use a regular bolt (screw) of the ground. At the end of the wire, it is necessary to crimp the terminal for the corresponding screw. Do not connect the ground wire to the body with a self-tapping screw.

Red wire – connection to the positive power source of the car with 12 or 24 V. For connection it is necessary to use regular wires of the car with section not less than 0,5 mm² or to be connected directly to vehicle battery.

Blue wire – connection to the engine blocked circuit. Cut one of the factory engine control circuits and connect an additional blocking relay. The blocking type – normally open (NO) or normally closed (NC) can be configured in the StarLine Master application. Normally closed blocking type is set by default.



Example of normally open blocking connection



Example of normally closed blocking connection

Green wire – connection to vehicle ignition circuit.

Brown wire and brown-white wire – connection to vehicle CAN bus interface wires.

Check detailed information on CAN bus connections and supported options at can.starline.ru

Make use of optional StarLine R6 wireless relay unit for remote engine blocking and optional hood lock control.

Configuration

Use StarLine Master universal software for quick and convenient configuration of tracker settings. Program is available for download at help.starline.ru

Using M66 tracker with StarLine E9 alarm systems

M66 tracker can be used as external GSM GPS extension module for StarLine E9 alarm systems. It's paired via Bluetooth Smart bringing the following features:

- remote control over E9 alarm system via SMS text commands, StarLine mobile App or at starline.online personal account;
- start engine remotely if supported;
- get SMS alerts;
- get events log in mobile App and starline.online account;

- track a vehicle location and routes in mobile App and starline.online account.

Specifics of M66 operation with StarLine E9 alarm systems

Personal account

Use login and password from M66 tracker personal ID card to sign in mobile App or starline.online web account.

Anti-hijack mode

To exit from active Anti-hijack mode and unlock engine use emergency disarm code from StarLine E9 personal ID card.

Software setup and upgrading

The software setup and upgrading for each device is performed separately.

To program and upgrade M66 tracker use a service code from M66 personal ID card.

To program and upgrade E9 alarm system use a service code from E9 personal ID card.

Pairing M66 tracker and E9 alarm system



WARNING! All previously paired devices (tags, smartphones, R6 relay) will be erased from M66 memory after it's pairing to E9 alarm system.

1) Switch E9 alarm into device registration mode (see E9 manual)

2) Switch M66 tracker into registration mode.

Send SMS command **REG XXXX**, where XXXX - emergency disarm code from M66 personal ID card. Wait for the confirmation SMS text message: «Device successfully registered: external control unit».

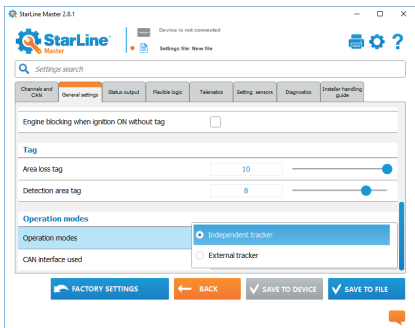
3) Registration finish shall be confirmed with 2 flashes of service button LED and 2 siren sounds, followed with the signals in amount corresponding to total number of registered devices. An SMS report with the list of registered devices shall be submitted to owner phone.

Exit from Registration mode is made at ignition switch Off or automatically in 5 min.

Disabling the “External GSM/GPS module” mode.

To disable the “External GSM/GPS module” mode and turn the tracker into normal operating mode, proceed following steps:

1. Connect the tracker unit to PC via USB cable.
2. Load StarLine Master software.
3. Enter to device settings.
4. Find «General operation modes» section in «General settings» tab and select the «Smart tracker» mode.



5. Register all the previously registered to StarLine M66 devices (tags, smartphones, relay module R6).

The manufacturer reserves the right to modify and improve the product design and technical features without prior notice.

