

GPS-tracker

with built-in GPS and GSM antennas

Spider TR-304



User manual

Key features:

No external antennas. It saves time and money for installation. It also fits well for hidden installation and keeps device less vulnerable to sabotage.

Compact design makes installation simplest and easiest ever possible. Hidden installation prevents sabotage and helps to rise up the security.

Intelligent track- drawing - device registers changes in speed, course, voltage, acceleration or braking, shocks, falls etc. No events or useful info will be missed, while no useless track-points will bother you.

Vehicle blocking (using auxiliary output) via web-service/phone call/SMS can be used. You can *block*, *unblock* or *block safely* (blocking will activate automatically on stop) engine, for example.

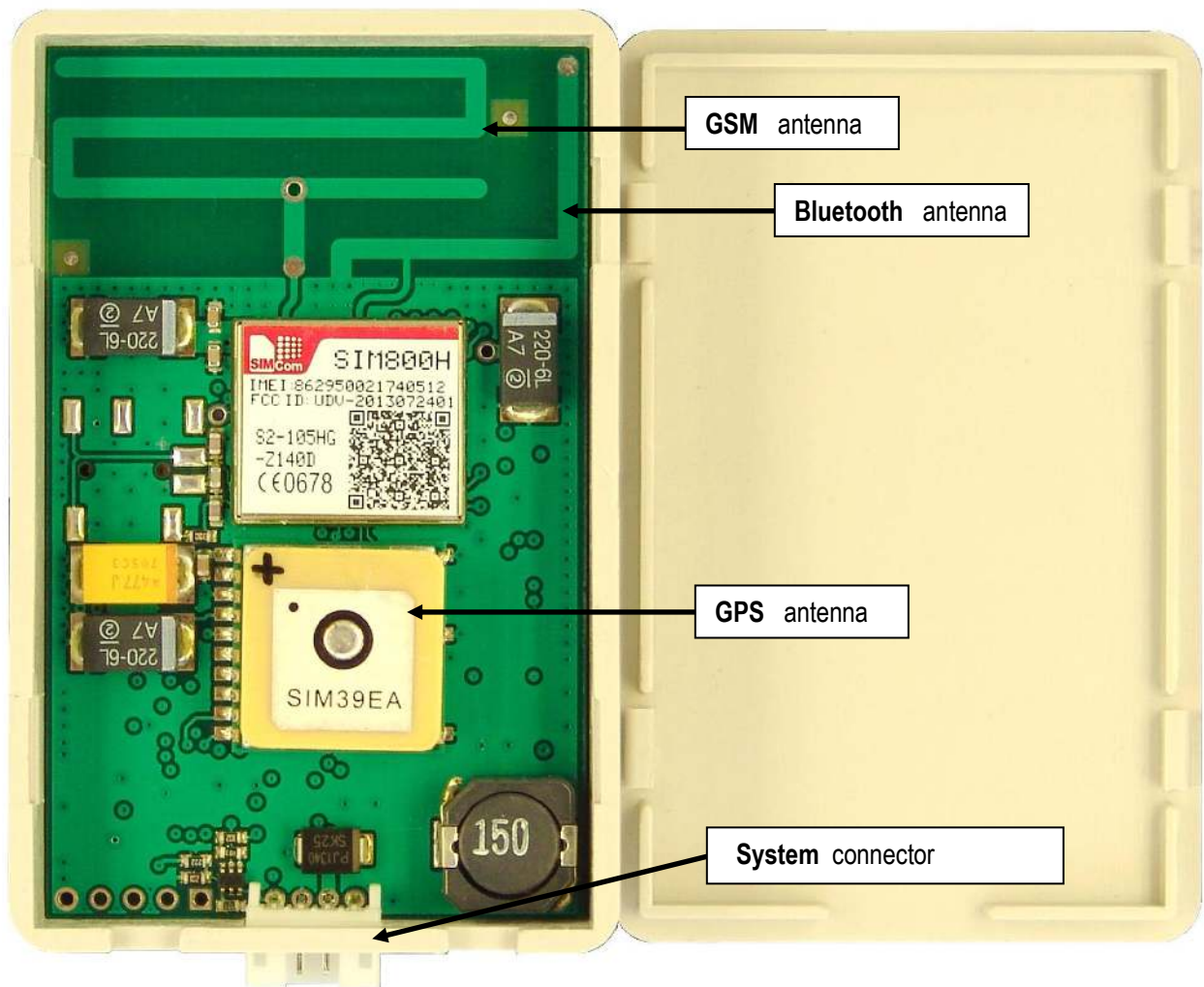
Additional external battery (12V VRLA type) can be optionally attached if needed

Extensive modes list (**online/periodic/stealth/moto/cargo**) gives you freedom to choose best balance between accuracy and actuality of tracking data and power saving of vehicle and tracker's battery.

All the device configuring (if needed) can be done remotely via user account on web server

Simple and intuitive usage – just plug device on and insert a SIM-card.

Device view (with cover removed):



Technical characteristics:

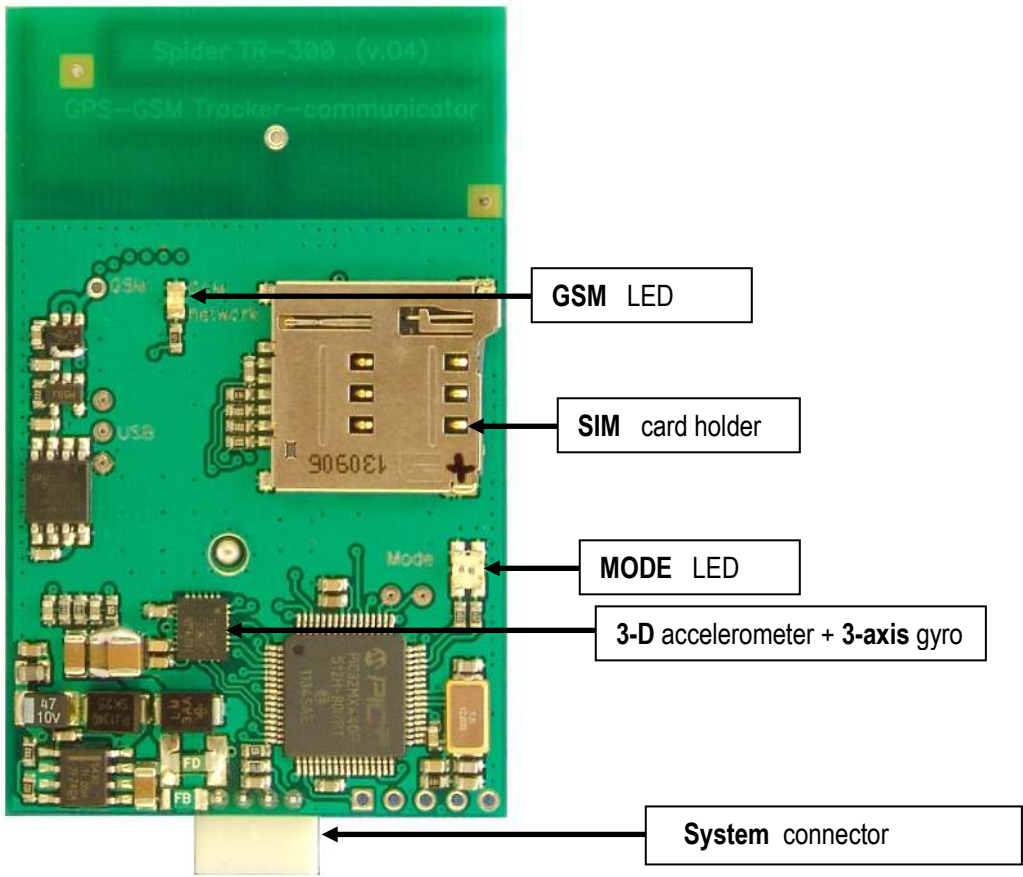
Positioning type	GPS
extra positioning (where satellite signal cannot be received)	GSM Cell-location
Tracking data transmission media	GSM900/1800/1900
FLASH-memory storage capacity	80000 points (~10 000 km)
Server connection protocol	Compressed, encrypted

Multifunctional I/O interface line can be used as:

Digital input:	Emergency-button / sec. alarm / extension line
Digital output:	

Main Power voltage	6... 30V
Reserved power voltage (LA battery)	12V
Operating temperature range	-25 ... +85°C
Storage temperature range	-35 ... +95°C
Size (l x w x h)	69 x 48 x 16 mm
Weight	0,045 kg

Device view (reverse side):



<p>GSM LED</p> <p>off</p> <p>1 blink per 1 second</p> <p>1 blink per 3 seconds</p>	<p>GSM-modem is off</p> <p>Network registration in progress (or impossible)</p> <p>Network registration is o.k.</p>
<p>MODE LED</p> <p>off (constantly)</p> <p>green for 0.5s (every 10s)</p> <p>green for 2s</p> <p>red for 2s</p> <p>green for 0.5s (once)</p> <p>red for 0.5s (once)</p> <p>red for 0.2s</p> <p>yellow for 0.2s</p> <p>yellow for >0.2s</p> <p>green blinking</p> <p>yellow blinking</p> <p>red blinking</p>	<p>device is in Sleep mode</p> <p>Active mode</p> <p>Waking up</p> <p>Sleeping down</p> <p>SIM inserted</p> <p>SIM removed</p> <p>new "point" added to log</p> <p>new "point" sent to server</p> <p>few new "points" sent to server</p> <p>firmware downloading</p> <p>firmware updating</p> <p>FLASH formatting</p>

SIM-card preparing

1. **SIM-card must be valid.** There should be money on pre-paid account. If card became inactive (or limited in service by an operator) tracker TR-304 will store all the data in internal FLASH-memory. This data will be sent to server as soon as connection will be restored.

2. **PIN must be disabled.**

The rest is optional...

3. You can optionally use contacts from address book of SIM-card

Remove all the unnecessary (“trash”) contacts from SIM-card first. Then you can add to **8 registered users** (and up to 20 contacts, including special setups).

Registered users:

- get the ability to control device via SMS
- get the ability to use audio port of device and take control via DTMF-menu
- will receive SMS notifications on Alarms and Emergency-button engaging

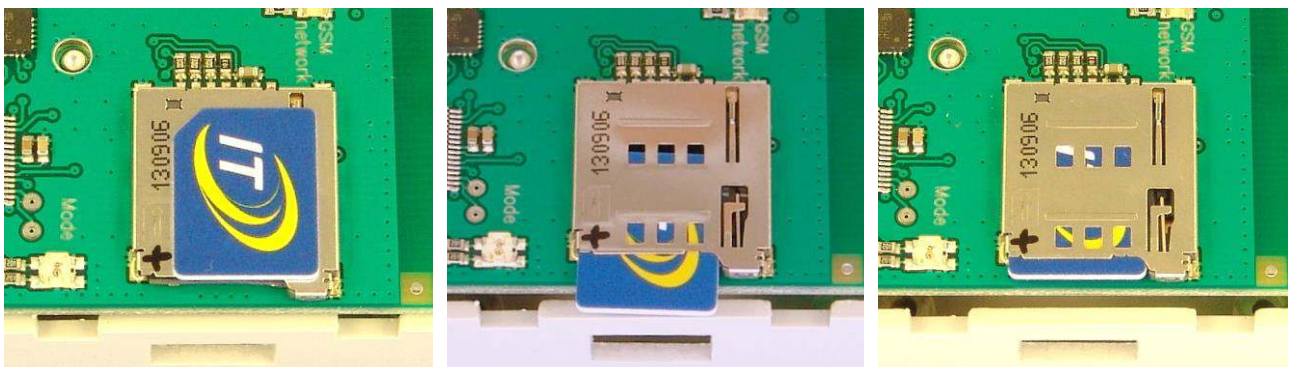
Registered users contacts should have international number format and can have any name of contact, except special ones (see below).

Spider TR-304 has an operators database for APN-setups and USSD codes for automatic balance check for many countries. It does not usually demand any manual programming. Nevertheless these setups can be overridden by registering contacts on SIM-card with special names:

- 3.1. Contact Name «\$» can contain USSD-code for checking balance (if needed) in Contact Number (ex. *111#)
- 3.2. Contact Name, beginning from «*» will be interpreted as APN name. Contact Number can be left empty for it. If APN name does not fit into one contact, you can use more contacts, beginning from «*»-symbol. Device will glue the text together.

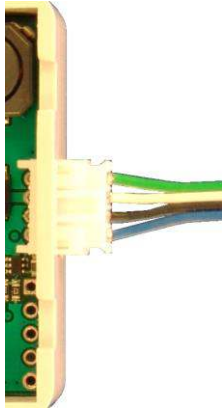
SIM-card installation

Take TR-304 PCB out of the box, insert SIM-card (micro-size) into the slot with contacts down as shown and push it until the click:



To release SIM-card just push it again.

System connector pinout:



GREEN	External VRLA battery (optional) (+), 1.3/2.2 A*h
WHITE	Power* (+ 6...30 V)
BLACK	GND
BLUE	Multifunctional I/O line

Detailed installation recommendations and connection schematics for specific vehicles (if needed) are available on demand. Contact our support team.

Powering the device

To power up TR-304 tracker must be powered constantly for proper operation.

It controls a vehicle engine running via power voltage changes.

Tracker saves energy, especially in Cargo and Moto modes, entering the sleep and awakes on starting an engine or movement. But power must be supplied constantly.

External Battery

TR-304 is a **compact**-design cost-effective tracker. That is why it does not contain internal battery. Nevertheless external battery can be optionally added if necessary. Use 12 V sealed VRLA (Valve Regulated Lead Acid) / AGM (Absorbent Glass Mat). 1.3 of 2.2 A*h batteries can be used (on 12 V vehicles).

Multifunctional I/O

TR-304 has a multifunctional I/O line, which can be configured with device setups as:

- Emergency-button input
- Security alarm input
- “Busy/in operation” input (for taxi or other commercial applications)
- Engine blocking output
- Extension Communication line (to connect o temperature sensors, TPMS system etc.)

Vehicle blocking

Blocking can be implemented using auxiliary output of Spider TR-304. It can be controlled:

- 1) Via DTMF-menu (buttons [*], [0] и [#])
- 2) Via SMS commands (*block*, *blocksafe* и *unblock*) from registered user
- 3) Via WEB server commands (*block*, *blocksafe* и *unblock*) from user’s account
 - block** – engages output immediately;
 - blocksafe** – will wait until vehicle stops then engages

Polarity of blocking can be programmed as Normally opened (no blocking with tracker removed) or Normally Closed (removing of tracker will block the vehicle).

Emergency button

Depressing EMERGENCY button generates system Emergency event which is transmitted to server as soon as possible. Emergency events have the highest priority and can be sent even in roaming connection-limited modes or tracker sleep mode with automatic waking up.

Emergency events are duplicated with SMS messages to all the registered on TR-304 SIM cards contacts (up to 8). Message will contain text: "**EMERGENCY!** <date, time>, <Location>, <google maps direct link>". This link can be opened in phone’s browser.

Registering on WEB server

Use internet browser to go to server page www.track-me.org
(we recommend Google Chrome, Opera, Firefox)

If you do not have an account – please register.

You can also use free access DEMO account (but it is available to everybody, so plan to register eventually)

When registering, have in mind few things: Minimal login length is 8 symbols. System will prevent you from inputting wrong with background color:

- rose — unacceptable login / low security password
- желтый — medium level password
- зеленый — acceptable login / good password

Keep your authorization data safe. Because of your access to your data depends on it.

After registering tell our support team ID of your device and account (login name) you want to tie it to.

You can use e-mail, skype or phone to contact support personally. You can also send this info via your dealer.

Configuring device

You can configure TR-304 setups:

- 1) with **SMS** commands
- 2) using online configuration tool on web-server **track-me.org**

We recommend you to use online configuration, which is simple and convenient.

Other methods configuring info is available on demand (contact support service if necessary)

Firmware update

There are 2 ways of firmware updating TR-304:




- using service connector (contact your dealer)
- **remote update** via web server (automatically)

To update FW via web server this option must be enabled it setups. Being notified with new FW available, TR-304 will download FW file from server and will update itself on next parking (to avoid tracking loss).

Everything will be done automatically.

Audio port and DTMF-menu

During phone call Spider TR-304 will react on DTMF-tones:

 <div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">1</div> Decrease mic. sensitivity	 <div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">2</div> Set mic.sens. to middle	 <div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">3</div> Increase mic. sensitivity
<div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">4</div>	<div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">5</div>	<div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">6</div>
<div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">7</div>	<div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">8</div>	<div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">9</div>
<div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">*</div> BLOCK	<div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">0</div> BLOCK safely	<div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto; text-align: center; font-size: 24px; font-weight: bold;">#</div> UNBLOCK

Warranty

As well as all products of Mobile Electronics co., **Spider® TR-304** trackers are covered **with lifetime warranty**.

Any component, material or manufacturing defect (if found while installation or using the product) will be repaired free of charge. If repair is impossible – device will be replaced.

This warranty does not cover malfunction caused by mechanical, chemical, electrical or any other damage caused by improper installation use in harsh surrounding beyond operation conditions. In these cases repair can be done for charge.

Wearable parts (like frequently used joints or connectors) and chemical power sources (**batteries and accumulators**) are covered with time-limited warranty – **2 years**.

This warranty applies to Spider® product and it's functionality, but does not cover any other damages, direct or indirect, arising from product operation or the impossibility of product use.

Firmware updates, including functionality improvements are free of charge for any legal owner of our products.

Contacts

WEB:

Online monitoring: <https://track-me.org/>

Technical info: <http://www.mobileelectronics.com.ua>

Support forum: <http://mobileelectronics.com.ua/forum/>

If any difficulties in getting support met –feel free to use direct phone number:

+38 095 0100015