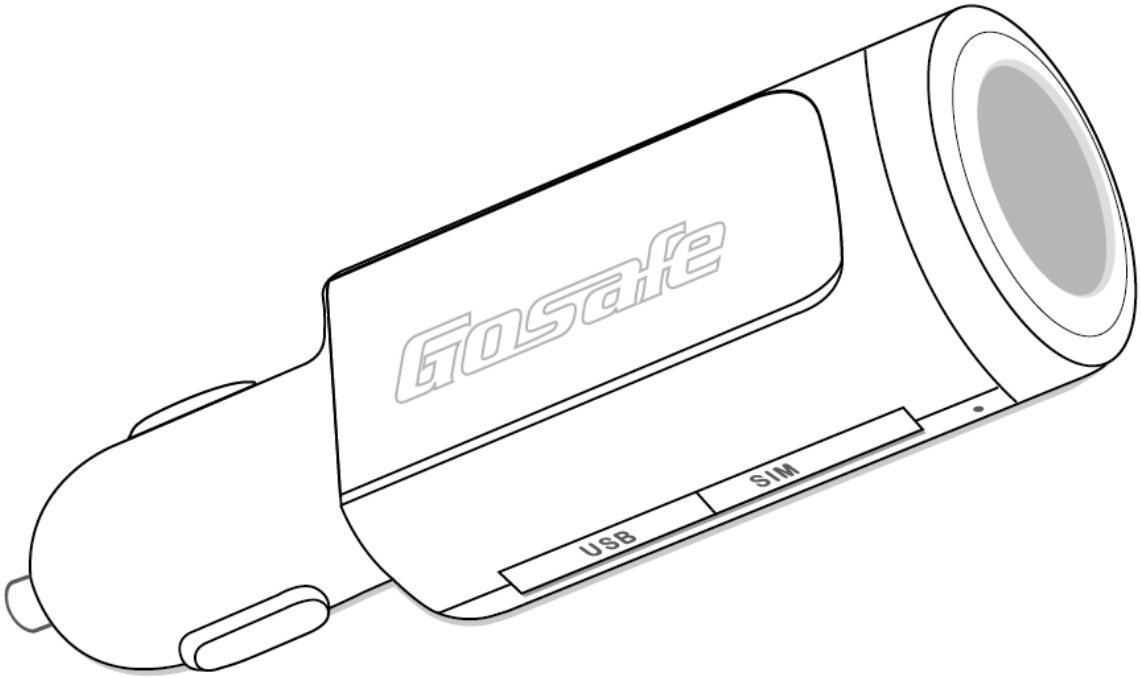

G7S User Manual v1.0

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ATTENTION

- Do not disassemble the device. Do not touch before unplugging the power supply if the device is damaged, the power supply cables are not isolated or the isolation is damaged.
- All wireless data transferring devices produce interference that may affect other devices which are placed nearby.
- The device may be connected only by qualified individuals.
- The device must be firmly fastened in the predefined location.
- The device is susceptible to water and humidity.

INSTRUCTIONS OF SAFETY

- This chapter contains information on how to operate “G7S” safely.
- BY following these requirements and recommendations you will avoid dangerous situations. You must read these instructions carefully and follow the strictly before operating the device!
- The device uses a 8V-32V DC power supply. The nominal voltage is 12V DC. It is advised to transport the device in an impact-proof package.
- Before usage, the device should be placed so that its LED indicators are visible, which show what status of operation the device is in.
- When connecting the connection cables to the vehicle, the appropriate jumpers of the power supply of the vehicle should be disconnected.
- Before dismounting the device from the vehicle, the connection must be disconnected.

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INTRODUCTION

- With accurate GPS location performance, a robust programmable rules engine, 3 axis accelerometer for measuring driver behavior and vehicle impacts, geo-fencing, messaging and much more, the G7S is designed for powerful solution deployment.
- The G7S is powered by over-the-air device management and maintenance system, (Programming, Updates, and Logistics System). FOTA (Firmware update over the air), GSM Jamming detection and 156 hardware based geo-fences makes this the perfect choice for superior safety and security of your vehicle.

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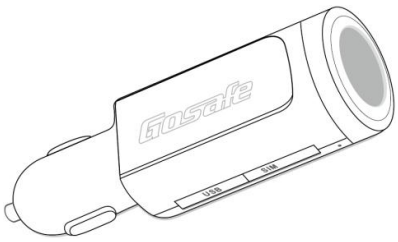
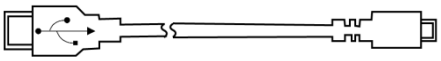
1. Packing list





2. Specifications

Physical	Dimension	108(L)*32(W)*32(H)mm	
	Weight	~60g (With backup battery)	
Environment	Operating temperature	-40℃ to +80℃ (without backup battery) -10℃ to +50℃ (with backup battery)	
Interface	Cigarette lighter	Nominal 12VDC	
USB	Mini USB	2.0	
CPU	ARM	STM32F103	
LED indicator	3 LED indicators	GSM & GPS & POWER	
Power supply	External	DC 8 to 32V	
	Backup battery	Type	Rechargeable, Li-Po 3.7V, 250mAh
Power consumption	Standby: 33mA@12V, Operating: 130mA@12V		
GSM/GPRS	Antenna	Built-In	
	Model	Cinterion BGS2-W	
		Quad band: 850/900/1800/1900MHz	
		Multiple-slot Class 8 (dual band)/10 (quad band) GPRS class 10/Station class B	
		TCP/IP over PPP	
	SIM card	1.8V & 3.3V	
GPS	Internal antenna	25*25mm with amplifier	
	External antenna	Not supported	
	Model	u-Blox NEO 6M	
	Channel	50 Parallel Channels	
	Accuracy	Autonomous<2.5M	
	Sensitivity	-162dBm	
Sensor	Accelerate sensor	Built-In, 3 axis	
Flash storage	16Mbits	Built-In	

3. Features and event

◆ **Features**

- ✓ Built-in 3 axis acceleration sensor
- ✓ A-GPS supported
- ✓ GSM jamming detection
- ✓ Private activity hour mode
- ✓ Multiple user profiles switching automatically on preset conditions
- ✓ Dynamic report interval on preset conditions
- ✓ Fixed distance and fixed angle cornering report
- ✓ Flexible report packet size on demand
- ✓ Various single events report and combination event report supported
- ✓ Hardware based Geo-fence supported up to 156
- ✓ OTA firmware upgrade supported

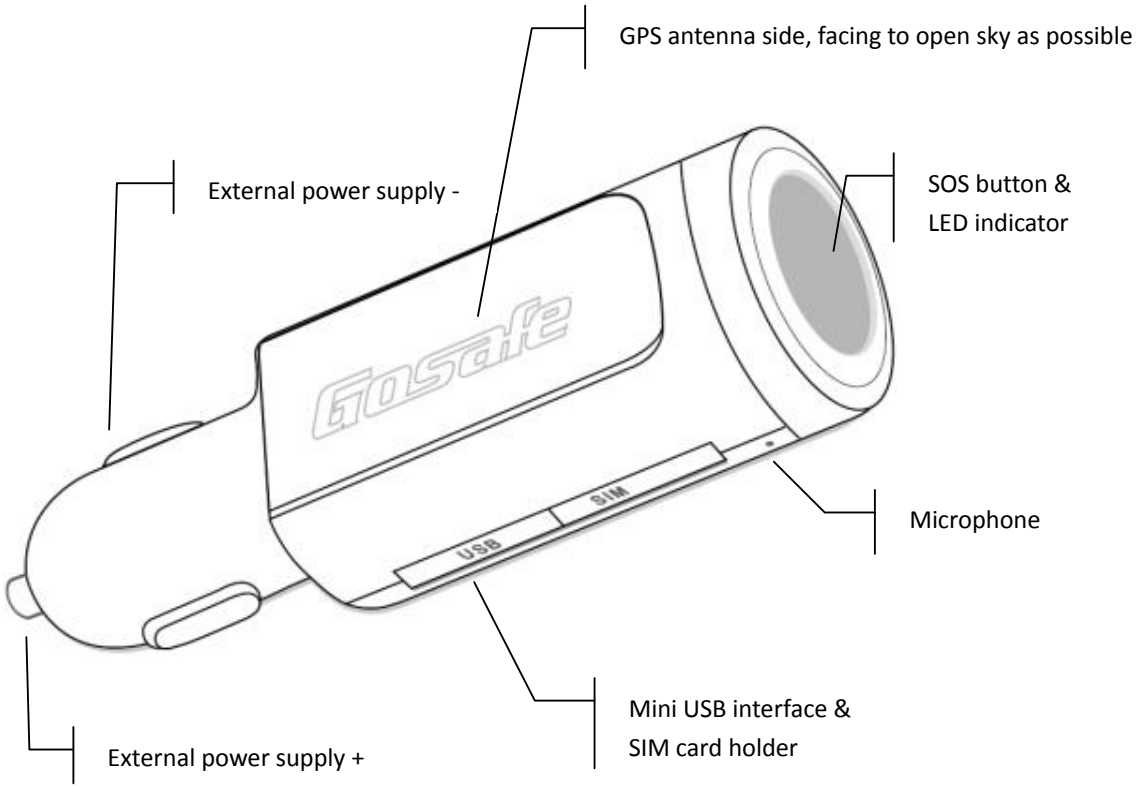
◆ **Supported event list**

Tracker is capable to report below specific events instantly via GPRS/SMS channel according to setting.

#	Event name	Status change event	
1.	Tow	Quit tow	Enter tow
2.	Idle	Quit idle	Enter idle
3.	Parking	Quit parking	Enter parking
4.	Speed	Enter preset speed range	Leave preset speed range
5.	GSM jamming	Quit jamming	Enter jamming
6.	Geo fence		Yes
7.	GPS acquisition		Yes
8.	Health report		Yes
9.	Harsh brake		Yes
10.	Harsh acceleration		Yes
11.	Harsh left cornering		Yes
12.	Harsh right cornering		Yes
13.	Collision		Yes
14.	Turn over		Yes
15.	External power supply		Under preset voltage threshold
16.	Backup battery		Under preset voltage threshold
17.	Engine status	ON to OFF	OFF to ON
18.	SIM card balance notice		Yes
19.	SOS event		Yes
20.	Cigar lighter	Tracker plug in	Tracker plug out

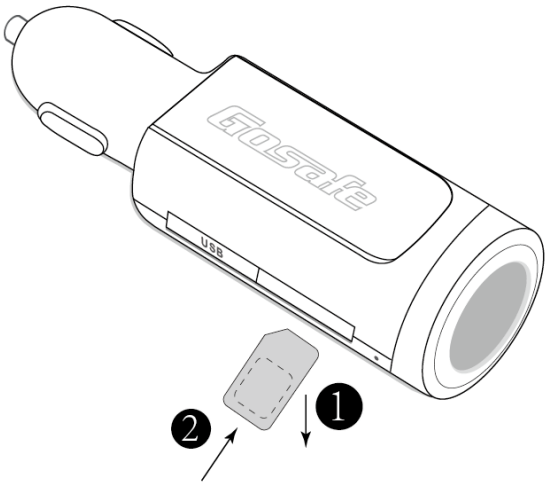
Note: Above events by default are disabled please enable them by configuration tool if necessary or contact your distributor for further information regarding this topic.

4. Overview



5. Installation

◆ **5.1. SIM card**



Please remove rubber cover for SIM card holder at first.

Step1:

Metal side of SIM card is facing down.

Step2:

Insert and push SIM card to bottom of SIM card holder, and then attach rubber cover to lock it firmly.

◆ **5.2. Sensor calibration**

This procedure is important for harsh behavior detection.

1. Plug in to cigar lighter interface of vehicle, tracker will make a sound of “bi” when plug in.
2. Please do not start the car at the beginning and keep still as possible
3. Wait about 20 seconds.
4. Tracker will make sound of “bi” 3 times which indicating “static calibration” finished.

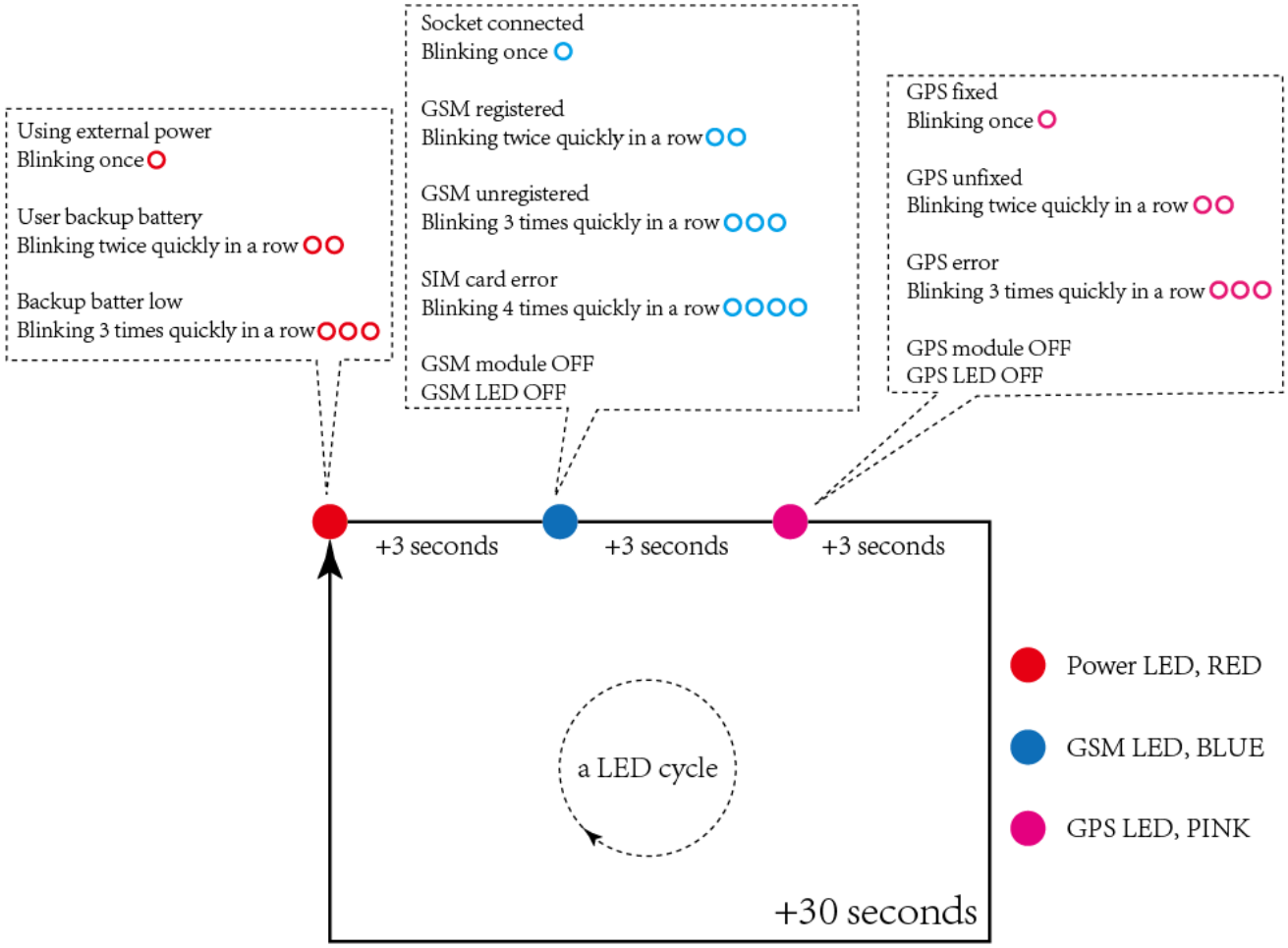
Note: For each external power cycle tracker will restart calibration procedure.

6. LED behavior

- Below shown how a LED “cycle” works:

1. At the beginning of each cycle, Red LED will blink first quickly to indicate current power status.
2. Then all LED OFF for 3 seconds, Blue LED starts to blink quickly to indicate current GSM status.
3. All LED OFF for another 3 seconds, Pink LED starts to blink quickly to indicate current GPS status.
4. After 3 seconds a “cycle” is finished, all LED OFF for 30 seconds to start another “cycle”.

- Cycle diagram, blinking times of LED in a “cycle” will be varied depending on its current status



7. User command

◆ **Command UNO0**

This command is to set user phone number#1 that has authority to interact with tracker.

Example:

Phone number: 13800138000, country code: +86

1234,UNO0;+8613800138000	Tracker
User SMS	**G7S V1.00** **UNO0:+8613800138000** **EXT_PWR=11.94V** **BAT=3.90V** **#1**

◆ **Command UNO1**

This command is to set user phone number#2 that has authority to interact with tracker.

Example:

Phone number: 13800138000, country code: +86

1234,UNO1;+8613800138000	Tracker
User SMS	**G7S V1.00** **UNO1:+8613800138000** **EXT_PWR=11.94V** **BAT=3.90V** **#1**

◆ **Command UPW0**

This command is to change the default password 1234 for user phone number#1, 4 digits fixed.

1234,UPW0;5678	Tracker
User SMS	**G7S V1.00** **UPW0:5678** **EXT_PWR=11.94V** **BAT=3.90V** **#2**

◆ **Command UPW1**

This command is to change the default password 1234 for user phone number#2, 4 digits fixed.

1234,UPW1;5678	Tracker
User SMS	**G7S V1.00** **UPW1:5678** **EXT_PWR=11.94V** **BAT=3.90V** **#2**

◆ **Command MEI**

This command is query GSM module IMEI of tracker, aka device ID.

1234,MEI	Tracker
User SMS	**G7S V1.00** **MEI:351535053999389** **EXT_PWR=11.94V** **BAT=3.90V** **#3**

◆ **Command BLS**

This command is to set low balance notification/Query current balance of tracker SIM card.

1234,BLS;*125	Tracker
User SMS	**G7S V1.00** **BLS:*125** **EXT_PWR=11.94V** **BAT=3.90V** **#4**

◆ **Command PRQ**

This command is to query current position of tracker.

1234,PRQ	Tracker
User SMS	**G7S V1.00** **LTM 2013-06-06 14:17:12** **http://maps.google.com/maps?q=23.164374,113.428576&t=m&z=16** **EXT_PWR=11.94V** **BAT=3.90V** **#5**

Note: Position information in message may vary depending on setting/current status.

◆ **Command MGR**

This command is to check current accumulation mileage of tracker.

1234,MGR	Tracker
User SMS	**G7S V1.00** **MGR:100000** **EXT_PWR=11.94V** **BAT=3.90V** **#6**

◆ **Command CID**

This command is to check CCID of tracker SIM card.

1234,CID	Tracker
User SMS	**G7S V1.00** **CID:89860090191149028638** **EXT_PWR=11.94V** **BAT=3.90V** **#7**

◆ Command CAL

This command is to ask tracker to call specific phone number, it will call back after receiving command.

1234,CAL;+8613800138000	Tracker
User SMS	**G7S V1.00** **CAL:+8613800138000** **EXT_PWR=11.94V** **BAT=3.90V** **#9**

◆ Command VER

This command is to query current hardware and firmware version of tracker.

1234,PRQ	Tracker
User SMS	**G7S V1.00** **VER:V1.02-US;V1.00** **EXT_PWR=11.94V** **BAT=3.90V** **#10**

◆ Command FWU

This command is to activate OTA firmware upgrade via GPRS.

1234,FWU	Tracker
User SMS	**G7SW V1.00** **FWU** **EXT_PWR=11.94V** **BAT=3.90V** **#10**

The OTA upgrade process may cost around 10 minutes and there is an confirm message for it.

	Tracker
User SMS	**G7SW V1.10** **Upgrade Success!** **EXT_PWR=11.94V** **BAT=3.90V** **#11**

8. Message sample

Content of message	*Explanation*
G7S V1.00	*Device name/Firmware version*
LTM 2013-06-06 14:17:12	*Date/Time*
http://maps.google.com/maps?q=%n(,%e&t=m&z=16	*Google map hyper link*
GSM -52dBm	*GSM network signal strength*
EXT_PWR=12.08V	*External power voltage*
BAT=3.86V	*Built-in battery voltage*
#30	*Consumed messages*

Content of message	*Explanation*
G7S V1.00	*Device name/Firmware version*
LTM 2013-06-06 09:41:22	*Date/Time*
GPS 1.55/0.50/3/4	*HDOP/ALTITUDE in meter/Fixed satellite number/Time of first fixed*
N23.164302	*N means north/S means south*
E113.428456	*E means east/W means west*
SPD:0km/h 0	*Speed/Heading*
GSM -52dBm	*GSM signal strength*
EXT_PWR=12.13V	*External power voltage*
BAT=3.96V	*Built-in battery voltage*
#27	*Consumed messages*

Content of message	*Explanation*
G7S V1.00	*Device name/Firmware version*
LTM 2013-02-28 23:51:09	*Date/Time*
MCC/MNC/LAC/CID/RSSI	*Base station information type*
460/0/2503/962C/-53dBm	*Main station, MNC/MNC/Local area code/Station ID/Signal strength*
460/0/2731/40F4/-60dBm	*Neighbor station 1*
460/0/2703/4050/-70dBm	*Neighbor station 2*
GSM -58dB	*GSM network signal strength*
EXT_PWR=5.13V	*External power voltage*
BAT=4.17V	*Built-in battery voltage*
#20	*Consumed messages*

Content of message	*Explanation*
G7S V1.00	*Device name/Firmware version*
LTM 2013-06-06 14:17:12	*Date/Time*
http://maps.google.com/maps?q=%n(,%e&t=m&z=16	*Google map hyper link*
ETD:6/ACC ON	*Event ID/User defined event name/Data*
GSM -52dBm	*GSM network signal strength*
EXT_PWR=12.08V	*External power voltage*
BAT=3.86V	*Built-in battery voltage*
#301	*Consumed messages*