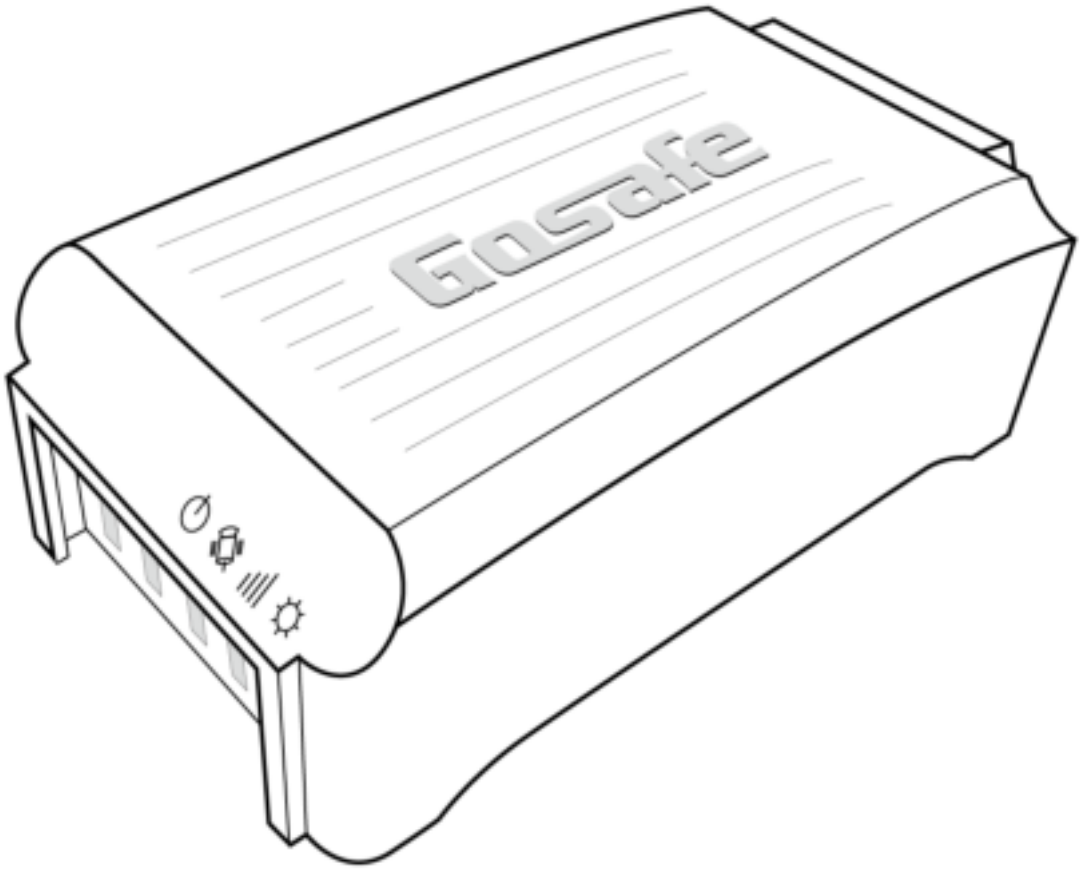


G1S User Manual v1.0

ATTENTION

- All wireless data transferring trackers produce interference that may affect other trackers which are placed nearby.
- The tracker may be connected only by qualified individuals.
- The tracker must be firmly fastened in the predefined location.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

INSTRUCTIONS OF SAFETY

- By following these requirements and recommendations you will avoid dangerous situations. You must read these instructions carefully and follow the strictly before operating the tracker!
- Please install the batteries carefully according this user manual indicates to avoid short circuit that may causes malfunction of tracker.
- Before usage, the tracker should be placed so that its LED indicators are visible, which show what status of operation the tracker is in.
- When connecting the connection cables to the vehicle, the appropriate jumpers of the power supply of the vehicle are recommended to be disconnected.
- Before dismounting the tracker from the vehicle, the connection must be disconnected.

LEGAL NOTICE

Contents

1. Specifications

Physical	Dimension	N/A
	Weight	N/A
Environment	Operating temperature	-20℃ to +50℃ (with battery)
USB	Micro USB	2.0, on board
CPU	ARM	---
LED indicator	3 LED indicators	GSM & GPS & POWER
Power supply	External	Battery pack/Power supply adapter
	Internal	3V battery*4, size:Φ17×34.5mm
I/O	1 GPIO Configurable for multiple purposes	Analog input/Digital input/Digital output
Power consumption	---	
Bluetooth	4.0	
Cell	Antenna	Built-In
	2G Model	BGS2-W
	3G Model	EHS-5
	SIM card	Mini SIM
GPS	Internal antenna	FPC
	External antenna	N/A
	Model	u-Blox
	Channel	50 Parallel Channels
	Accuracy	Autonomous<2.5M
	Sensitivity	-162dBm
Sensor	G-sensor	Built-In, 3 axis
	Light sensor	Yes
NAND Flash	16Mbits	Built-In

Note: Early production information

2. Packing list

Item	Remark
Tracker	G1S
Battery	4 PCS 3V batteries, regular/rechargeable
Battery pack	To expand power supply life
Charger with I/O wire	Power adapter for charging with 1 GPIO wire
USB Bluetooth dongle	For wireless configuration, work with configuration utility on PC
Magnet panel	Help to attach tracker on metal surface

3. Features and event

3.1. Features

- IP67 rating which provides protection against temperature/dust/water spray
- Bluetooth connectivity, for wireless configuration and periodical report.
- Endurable battery life for long term deployment, and external battery pack supported
- Built-in 3 axis G-sensor for motion detection
- Light sensor for tracker removing alarm
- GSM jamming detection
- Dynamic report interval according to preset conditions (parking/roaming etc.)
- Fixed distance and fixed angle cornering report
- Flexible report packet size on demand
- Hardware based Geo-fence supported up to 156 for instant notification
- OTA firmware upgrade supported

3.2. Supported event list

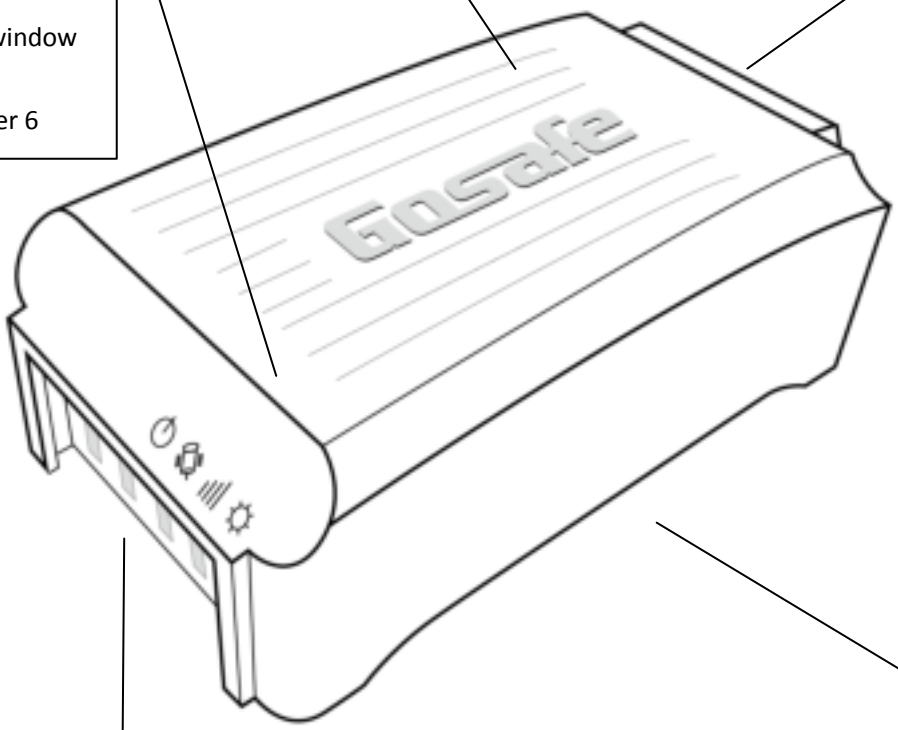
Tracker is capable to report below specific events instantly via GPRS/SMS channel according to setting.

#	Event name	Report on state changing	
1.	Tow	Tow deactivate	Tow activate
2.	Idle	Idle deactivate	Idle activate
3.	Parking	Parking activate	Parking deactivate
4.	Speed	Enter preset speed range	Leave preset speed range
5.	GSM jamming	Jamming activate	Jamming deactivate
6.	Geo fence		Activate
7.	GPS first time to fix (in a power cycle)		Activate
8.	GPS fix restore		Activate
9.	Harsh driving		Activate
10.	Collision		Activate
11.	Turn over		Activate
12.	External power supply	Remove	Connect
13.	SOS		Activate
14.	Battery charger	Remove	Connect
15.	G-sensor calibration		Activate
16.	Battery low	Deactivate	Activate
17.	Input1 (set as analog)	Enter preset range	Leave preset range
18.	Input1 (set as digital)	High to low	Low to high
19.	Balance low		Activate
20.	Light sensor	Deactivate	Activate
21.	ACC state	Deactivate	Activate
22.	Engine state	Deactivate	Activate

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.

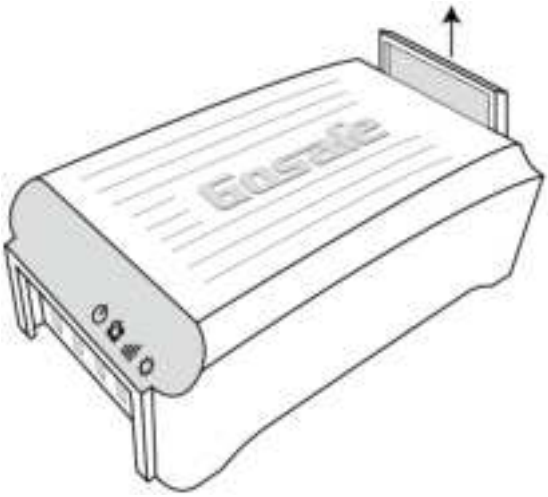
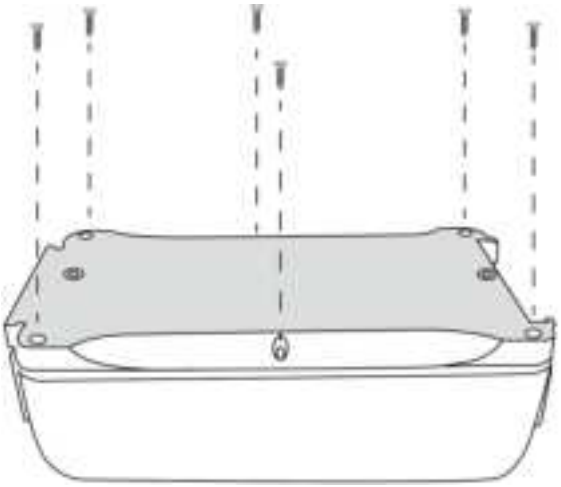
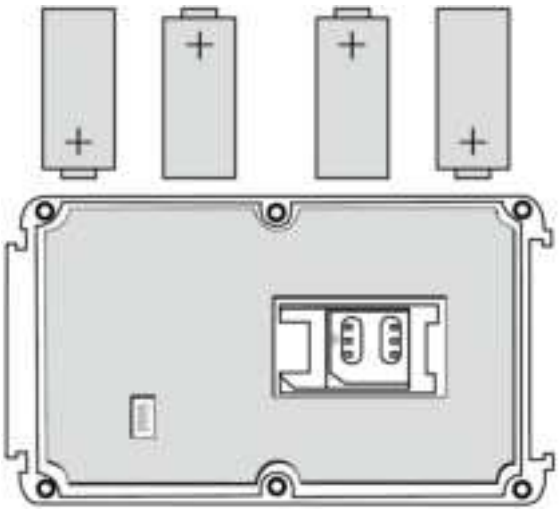
4. Overview

Here gives a brief mechanical structure introduction for G1S

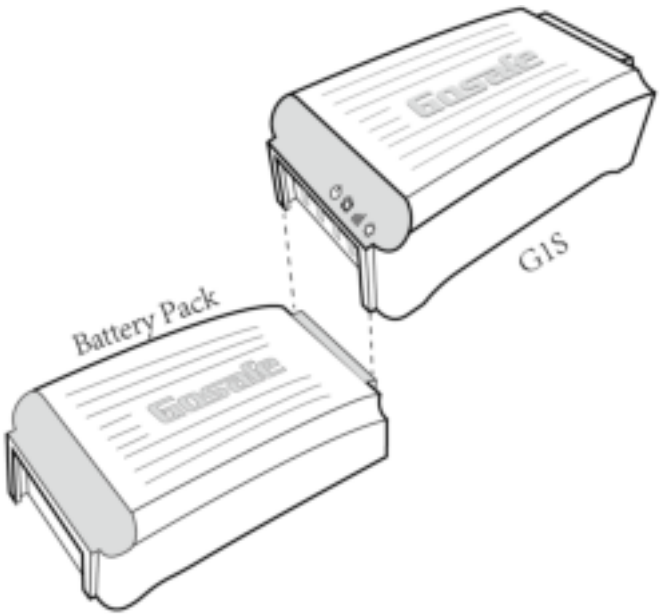


5. How to

Install SIM card

	**Remove cover locker at the shown direction**
	**Release 6 screws to remove back cover, it is possible that back cover attaches with magnet panel, and it can be removed**
	**Remove batteries to unveil SIM card holder and USB Jack** **Install SIM card by referring guide mark on the SIM card holder, metal side of SIM card is supposed to face PCB board** **Please install batteries back exactly as shown polarity**

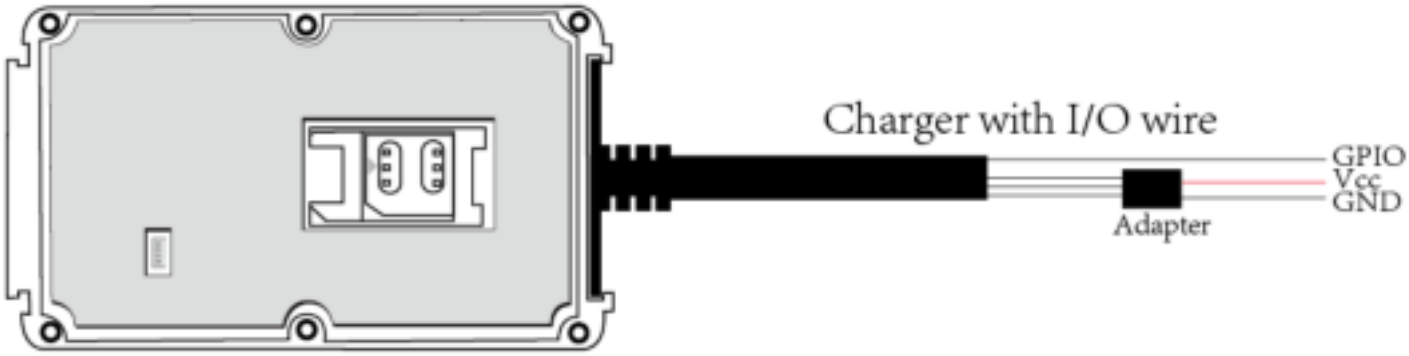
Install battery pack (Optional)



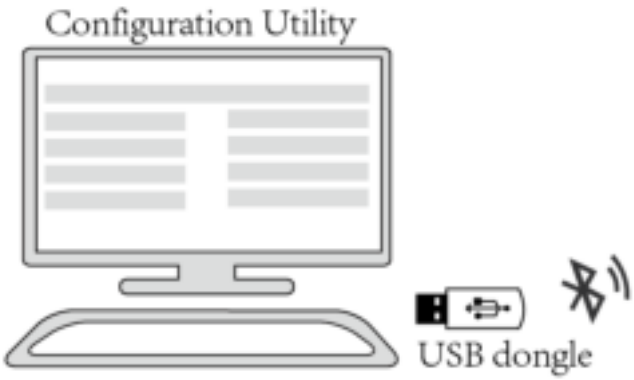
Battery pack is using similar case as G1S

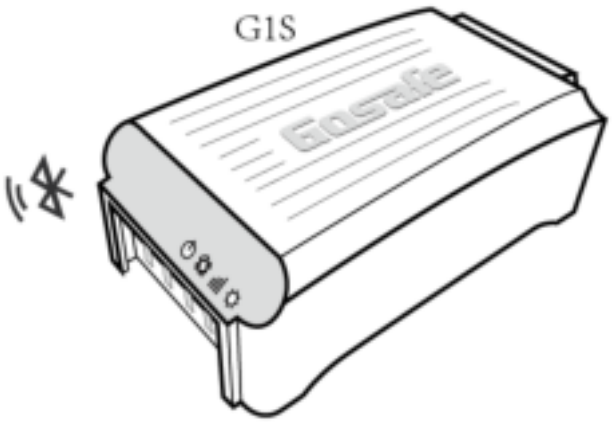
Align contact PIN of each other well to lock battery pack with G1S

Install Charger with I/O wire (Optional)



USB Bluetooth dongle





6. LED behavior

GSM state indicator (GREEN)

				
GPRS OK	**GSM REGISTER OK**	**GSM REGISTER FAIL**	**SIM CARD ERROR**	**MODULE OFF**
LED will blink once every 3 seconds	LED will blink twice in a row quickly every 3 seconds	LED will blink 3 times in a row quickly every 3 seconds	LED will blink 4 times in a row quickly every 3 seconds	LED is constantly OFF

GPS state indicator (YELLOW)

			
GPS FIX	**GPS NOT FIX**	**GPS ERROR**	**MODULE OFF**
LED will blink once every 3 seconds	LED will blink twice in a row quickly every 3 seconds	LED will blink 3 times in a row quickly every 3 seconds	LED is constantly OFF

Power state indicator (RED)

		
USING EXTERNAL	**USING INTERNAL**	**INTERNAL LOW**
LED will blink once every 3 seconds	LED will blink twice in a row quickly every 3 seconds	LED will blink 3 times in a row quickly every 3 seconds

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	**G1S V1.00** **UNO0:+8613800138000** **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	**G1S V1.00** **UNO1:+8613800138000** **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	**G1S V1.00** **UPW0:5678** **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	**G1S V1.00** **UPW1:5678** **BAT=3.90V** **#2**

- **Command MEI**

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

1234,MEI	Tracker
User SMS	**G1S V1.00** **MEI:351535053999389** **BAT=3.90V** **#3**

- **Command GVR**

This command is to query GSM module model.

1234,GVR	Tracker

User SMS	**G1S V1.00** **GVR:AGS2-W,REVISION 00.020** **BAT=3.90V** **#3**

- **Command PRQ**

This command is to query current position of tracker.

1234,PRQ	Tracker
User SMS	**G1S V1.00** **LTM 2013-06-06 14:17:12** **http://maps.google.com/maps?q=23.164374,113.428576&t=m&z=16** **BAT=3.90V** **#5**

Note: Position information in return message may vary depending on setting/current status, it could be map link/current coordinate/cell tower info.

- **Command MGR**

This command is to check current accumulation mileage of tracker, unit is meter.

1234,MGR	Tracker
User SMS	**G1S V1.00** **MGR:100000** **BAT=3.90V** **#6**

- **Command ERT**

This command is query current engine hour, time format is in HHHHHH:MM:SS

1234,ERT	Tracker
User SMS	**G1S V1.00** **ERT:100:20:50** **BAT=3.90V** **#6**

- **Command CID**

This command is to check CCID of tracker SIM card.

1234,CID	Tracker
User SMS	**G1S V1.00** **CID:89860090191149028638** **BAT=3.90V** **#7**

- **Command VER**

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

1234,VER	Tracker	Remark
User SMS	**G1S V1.00** **VER:V1.02-US;V1.00** **BAT=3.90V** **#10**	VER:<Hardware version>;<Firmware version>

- **Command GPS**

This command is to query current GPS coordinate of tracker (if available).

1234,GPS	Tracker
User SMS	**G1S V1.00** **GPS: 1.55/0.50/3/4** **N23.164302** **E113.428456** **SPD: 0km/h 0** **GSM: -52dBm** **BAT=3.90V** **#10**

- **Command GSM**

This command is to query current cell tower status.

1234,GSM	Tracker
User SMS	**G1S V1.00** **LTM 2013-02-28 23:51:09** **MCC/MNC/LAC/CID/RSSI** **460/0/2503/962C/-53dBm** **460/0/2731/40F4/-60dBm** **460/0/2703/4050/-70dBm** **GSM: -58dB** **BAT=4.17V** **#20**

- **Command SCC**

This command is to reset SMS counter in message to 0

1234,SCC	Tracker
User SMS	**G1S V1.00** **SCC** **BAT=4.17V** **#0**

- **Command GFC**

This command is to remove all Geo fences at a time, please use it with caution.

1234,GFC	Tracker
User SMS	**G1S V1.00** **GFC** **BAT=4.17V** **#1**

- **Command EUC**

This command is to remove all event report setting at a time, please use it with caution.

1234,EUC	Tracker
User SMS	**G1S V1.00** **EUC** **BAT=4.17V** **#1**

- **Command DOO**

This command is to control output leave of digital output.

1234,DOO;0	Tracker	Remark
User SMS	**G1S V1.00** **DOO:0** **BAT=3.90V** **#10**	DOO;<Parameter> <Parameter>: 0: Low level 1: High level 2: Rising edge 3: Failing edge 4: Square wave 1 5: Square wave 2 6: Square wave 3 7: Square wave 4

- **Command FWU**

This command is to activate OTA firmware upgrade via GPRS.

1234,FWU	Tracker
User SMS	**G1S V1.00** **FWU** **BAT=3.90V** **#10**

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

	Tracker
User SMS	**G1S V1.10** **Upgrade Success!** **BAT=3.90V** **#11**

- **Command FCL**

This command is to cancel ongoing OTA process.

1234,FCL	Tracker
User SMS	**G1S V1.10** **FCL** **BAT=3.90V** **#11**

8. Message sample

Content of message	*Explanation*
G1S V1.00	*Tracker 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*
BAT=3.86V	*Built-in battery voltage*
#30	*Consumed messages*

Content of message	*Explanation*
G1S V1.00	*Tracker 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*
BAT=3.96V	*Built-in battery voltage*
#27	*Consumed messages*

Content of message	*Explanation*
G1S V1.00	*Tracker 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*
BAT=4.17V	*Built-in battery voltage*
#20	*Consumed messages*

Content of message	*Explanation*
G1S V1.00	*Tracker 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*
BAT=3.86V	*Built-in battery voltage*
#30	*Consumed messages*