Update History

DATE	Updates content
2016-08-17	Update product parameter

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FCC ID: RSRG1SL

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

INSTRUCTIONS OF SAFETY

This chapter contains information on how to operate "G1SL" safely.

By following these instructions, requirements and recommendations one can avoid dangerous situations. You must read these instructions carefully and follow them strictly before operating the device.

The device with internal battery for long-time storage need regularly be charged to avoid over-discharge and it should be stored in a dry and cool place, if the storage time is longer than two months.

Do not remove the device without authorization.

The device has light detection sensor. Ensure the device and installation plane fit fully when you install it.

Before demounting the device from the vehicle, disconnect it's all connections.

CONTENTS

1. G1SL introduction

G1SL is a GPS tracker with powerful function, which is used for assets management mainly. It's low power consumption, high level of waterproof products. It has build-in high capacity rechargeable lithium battery, allowing using external multilevel extension battery packet. The device has abundant function, support Bluetooth configuration, APP to browser drive trajectory and other Bluetooth accessories control functions. Support device tamper detection. Support movement, stillness, harsh brake, collision and turnover detection etc.

- Main and backup GPRS server, SMS server, Bluetooth server and report way of dual users can be configured flexibly
- Set time, distance, angle , event and dynamic upload
- Flexibly configure single event, comb events
- 28 polygons and 128 Geo-fence, can relate to speed, time and level factor
- Read ,import the configuration command file, and switch to different configuration in different scene
- Local and remote upgrade
- Can configure white list of position requesting information Anti-Jamming
- Automatic time calibration and time zone, daylight saving time setting
- Private hour
- Three axis acceleration sensor to achieve movement, emergency driving behavior (harsh brake, accelerate, turn), accident (turnover collision) detection.
- Over-speed monitoring, mileage statistics, engine running time statistics
- Towing and idling monitoring
- Power supply monitoring, low power consumption and multistage power supply management
- Remote configuration

2. G1SL Specifications

Physical	Dimensions	96（L）*50（W）*31.5（H） mm
	Weight	140g (include CR123A battery)
Environment	Operating temperature	-40 ~ +60°C (with CR123 Battery) -10 ~ +50°C (with CR123A Battery)
	Humidity	100%RH @ 50°C non-condensing
	Waterproof and dustproof	IP6-7 — Dustproof: prevent outside thing intrusion, and can completely prevent dust. IP6 Waterproof: Short-term immersion under atmospheric pressure, when the shell temporary immersion in the 1 m deep water will not cause harmful effects. IP-7
	Shock & Vibration	U.S. Military Standards 202G and 810F, SAE J1455
	EMC/EMI	SAE J1113; FCC–Part 15B
	RoHS	Compliant (Optional)
USB	Normal 4Pin socket on PCB, space 1.25MM	
CPU	ARM Cortex M3	
Bluetooth	4.0	
Communicate modes	GPRS/EDGE and TCP/UDP/SMS	
Flash memory	4Mbit (8000 records)	
Power	Operating voltage	3-5V
	Replace battery	LI-PO (4000mAh) (Optional) Battery Recharging Range is 0 to +45°C
Power consumption	Sleep mode	150μA 3.5V
	Power saving mode	300μA 3.5V
	Active tracking mode	100mA 3.5V
Communication	Data Support	SMS. TCP, UDP
	GSM/GPRS Quad Band	850/900/1800/1900 MHz
	3G Dual Band US	850/1900 MHz (Optional)
	3G Dual Band EU	900/2100 MHz (Optional)
	GSM/GPRS Output Power	Class 4 (2W) for 850 / 900 bands

		Class 1 (1W) for 1800 / 1900 bands
	GSM/GPRS Fallback	GPRS Class 10
	HSPA Data Rate	5.76Mbps UL/7.2Mbps DL (Optional)
	SIM Card	1.8/3.3 V
GPS	Location Technology	50 Channel Ublox GPS (with SBAS) GPS L1 C/A Code SBAS, WAAS, EGNOS, MSAS
	Assist GPS	Supported
	Sensitivity	-162 dBm
	Accuracy	SBAS 2.0m CEP
Detector	Build-in detector	3D sensor	Driving behavior(harsh turn, accelerate brake, collision), move alarm
Input/output	LED	3 LED	GPS/GSM/Power status
	Light sensor	Built-in	Detect detach
	Charging cord	Two point charging Cord
	Digital input	1 digital input(optional)
Connectors, SIM card access	Connection type	4 PIN
	Serial to USB	1USB (configuration/debug/optional)
	Power switch	Device power ON/OFF switch
	GPS antenna	Internal
	GSM antenna	Internal
	SIM card	Internal (embed SIM optional)

3. Product overview

3.1 Check Part List

Before starting, check and make sure the following items have been included with your device. If anything is missing, please contact your supplier.

①Standard Part List

Main unit

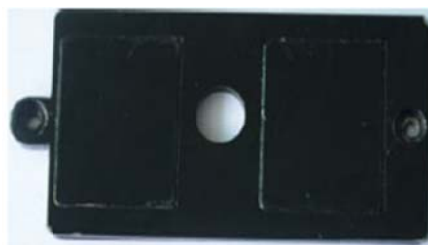Battery   waterproof of port
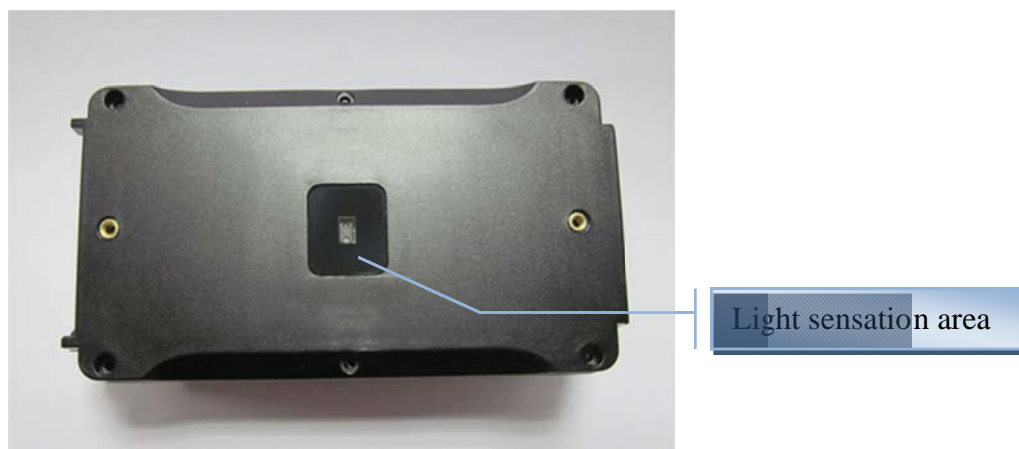
②Optional Part List

USB cable

IO cable

Charger

Magnet

Screw

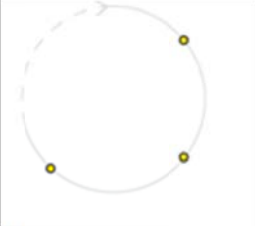battery packet

![Gosafe]

3.2 Product indicator diagram

Charging LED indicator

GPS LED indicator

System LED indicator

GSM LED indicator

Battery packet connector or IO data connector

Light sensation area

3.3 Interface Definition
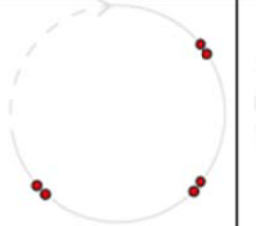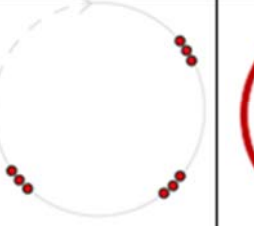
Interface definitions are as below.

Pin	Name	Definition
1	VCC	DC5V input, battery packet supply or charger to input
2	AD1	Battery packet detection
3	IN/OUT1	General bidirectional input/output
4	GND	Ground

3.4 LED indicator behavior

GSM status indicator (Green)					
GPRS connected	GSM registered	GSM error	SIM card error	Serial port communication error	GSM module off
LED flash 1 time every 3 seconds	LED flash 2 times every 3 seconds	LED flash 3 times every 3 seconds	LED flash 4 times every 3 seconds	LED flash 5 times every 3 seconds	LED off

GPS status indicator (Yellow)			
GPS fixed	GPS unfixed	GPS error	GPS off
LED flash 1 times every 3 seconds	LED flash 2 times every 3 seconds	LED flash 3 times every 3 seconds	LED off

Power status indicator (Red)			
Use external power	Use internal power	Internal battery low voltage	Battery charging
LED flash 1 times every 3 seconds	LED flash 2 times every 3 seconds	LED flash 3 times every 3 seconds	LED on all the time

4. Device installing way

4.1 Dismount

a) Open device cap

✧ Unscrew it

✧ Open the cap

b) Install SIM card

✦ Open card slot

✦ Install SIM card

✦ Close card slot

c) Close device cap

✧ Be sure to plug in the power line at first time use.

✧ Connect USB cable and use configuration tool to configure device.
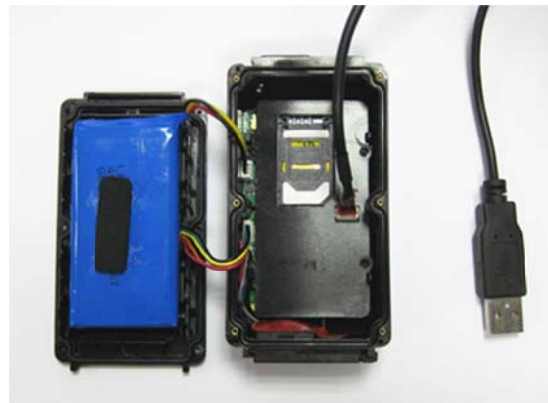
✧ Screw cap on

4.2 Configure device

a) Install device driver

Device driver file Gosafe-Cdc
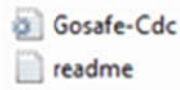
b) Open the configuration tool

By double click "Configuration Tool"

Note: if there is an error or you are unable to open the file, please install
"Microsoft .NET Framework" 4.0 or latest version in your computer.

Software interface is as below.
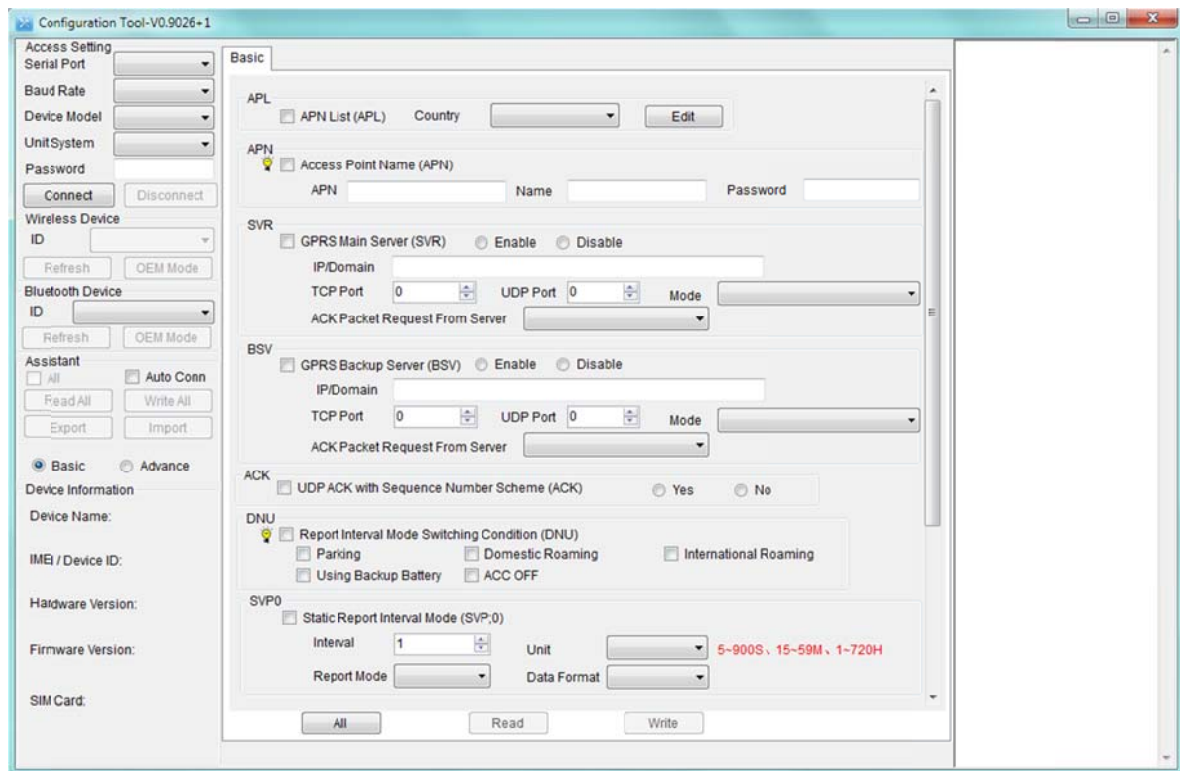
c) Connect the device to your computer. Choose the correct serial port and device mode, and then click 'connect'.

d) Input your desired parameters and click 'write' to write all of the data to device.

4.3 Install magnet

Use two screws to fix magnet.

4.4 Connect battery packet

a) Connect

b) Close

c) Fasten

4.5 Dismantle battery packet

Use tweezers or other tools to insert and press down the point showed on the picture, at the same time open the buckle to dismantle the battery packet.

4.6 Charging device

charging connectors
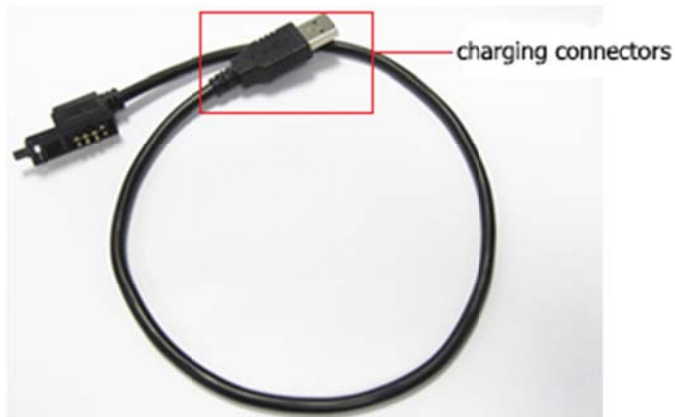
a) Connect IO cable   b) Fasten

c) Charging

5. Common commands

Set your cell phone number as User0 or User1. This will allow you to send SMS commands to control and receive messages from the device.

5.1 Set User Phone Number

Command:

Command:

UNO command is to set 2 users' phone numbers. Both users have the same authorization. With the correct password, any phone number is able to use this command. User0's factory default password is "1234", User1's factory default password is also "1234".

Command format:

1. Set user0 phone number:

< User0 Password>, UNO0 ;< new phone number>

2. Set user1 phone number:

< User1 Password>, UNO1 ;< new phone number>

Parameter description:

<New phone number>: the length must be less than or equal 20 digits. The setting has two formats:

1. Domestic phone number: without country code.

2. International phone number: with country code. Add "+" before the numbers.

Example:

Set user0 phone number:

Set user0 phone number:

1234, UNO0; +8613912345678

Or

1234, UNO0; 13912345678

5.2 Set User Password

Command:

UPW command set user password. User0's factory default password is "1234". User1's factory default password is "1234". Changing the factory password upon first use is highly suggested.

Command format:

1. Set user0 password:

< User0 Password>, UPW0 ;< New Password>

2. Set user1 password:

< User1 Password>, UPW1 ;< New Password>

Parameter description:

< New Password>: Fix 4 digits, range is "0000 to 9999"

Example:

Set user0 password

1234, UPW0; 5678

5.3 Set ACK

Command:

ACK command is used for UDP response mechanism switch

Command format:

Disable UDP response: ACK; 0

Data packing method is the same as before

Enable UDP response: ACK; 1

Data packing includes sequence number and ID

Parameter description:

This function needs SVR command set as UDP mode to open a response.

Example:

Enable UDP mode and open a response

SVR; 183.233.129.45; 6667; 1; 1

Enable new respond mechanism

ACK; 1

Configure the initial waiting reply time

SVT; 1800; 15

5.4 Set Position Report Interval to User

Command:

USP command is to set mode0 (static mode) and mode1 (dynamic mode) report interval to user, data upload and data format.

Command format:

1. Set position report interval to user0:

<User Password>, USP0; <Mode> ;< Interval> ;< Report mode> ;< Data format>

2. Set position report interval to user**1**:

<User Password>, USP1; <Mode> ;< Interval> ;< Report mode> ;< Data format>

Parameter description:

<Mode>:

"0": represents static upload mode

"1": represents dynamic upload mode.

It is valid only when DNU command enabled.

<Interval>:

Report interval, range is "30 to 900 seconds", "15 to 59 minutes", "1 to 720 hours".

The parameter unit definition as follows:

S: Second M: Minute H: Hour

<Report mode>:

"O": Disable

"G": Upload GPS information basically, if without GPS signal, it will upload BS information, and BS information show in HEX.

(Set uploads data packet data ID "GPS data" and "GSM data" mask as1.)

"L": Periodical voice calls (Voice monitoring).

<Data format>:

"O": Not generate data.

"T": Text

"W": Map hyper link

Example:

Set User0 static report interval:

1234, USP0; 0; 1H; G; W

Disable User0 static report interval: 5000

1234, USP0; 1; 24H; O; W

5.5 Set SIM Card APN

Command:

APN command is required for GPRS connectivity.

Command format:

< User Password>, APN ;< APN > ;< user name > ;< password >

Parameter description:

<APN>: 1 to 64 characters

<User name>: 0 to 32 characters

<Password>: 0 to 32 characters

If there is not a user name and password for APN, the command could be:

APN ;< APN>

Note: The device already contains many APNs. It will automatically identify APN information after inserting SIM card.

Example:

Set APN, user name, and password

1234, APN; CMNET; USR; PW

Query setting:

1234, APN

5.6 Set GPRS Main Server

Command:

SVR command is to set GPRS main server.

Command format:

<User Password>,SVR;<IP address>;<TCP Port>;<UDP Port>;<Mode>;<Enable ACK>

Parameter description:

<IP address>: IP or domain name, 64 bytes maximum.

<TCP Port>: TCP port

<UDP Port>: UDP port

<Mode>:

"0": TCP mode "1": UDP mode

"2": TCP command interaction，UDP data upload mode

<Enable ACK>:

"0": Disable UDP communicates response mechanism.

"1": Enable UDP communicate response mechanism, this is default setting

"2": Enabled for UDP and TCP both.

Note: <Enable ACK>: "1":device data is send via UDP channel The server must respond with any data during ACK setting time, otherwise the device will consider the UDP disconnect and save data into internal flash storage.

Example:

Set as TCP port:

1234, SVR; 114.142.154.28; 3032; 0; 0

Or

1234, SVR; www.anytracking.net;3032;;0;0

Set as UDP port:

1234, SVR; 114.142.154.28;; 3032;1;1

Or

1234, SVR; www.anytracking.net;;3032;1;1

Delete main server:

1234, SVR;

Query setting:

1234, SVR

5.7 Set GPRS Backup Server

Command:

BSV command is to set GPRS backup server.

The device connects with the main server as priority. When the connection between device and main server is overtime, it will switch to the backup server. After the device is connected with the backup server reach setting time, it will try to connect with the GPRS main server automatically.

Command format:

<User Password>,BSV;<IP address>;<TCP Port>;<UDP Port>;<Mode>;<Enable ACK>

Parameter description:

<IP address>: IP or domain name, 64 bytes maximum

<TCP Port>: TCP port

<UDP Port>: UDP port

<Mode>:

"0": TCP mode

"1": UDP mode

"2": TCP command interaction，UDP data upload mode

<Enable ACK>:

"0": Disable UDP communicates response mechanism.

"1": Enable UDP communicate response mechanism, this is default setting

"2": Enabled for UDP and TCP both.

Note: <Enable ACK>: "1":device data is send via UDP channel The server must respond with any data during ACK setting time, otherwise the device will consider the UDP disconnect and save data to internal flash storage.

Example:

Set as TCP port:

1234, BSV; 114.142.154.28; 3032;; 0;0

Or

1234, BSV; www.anytracking.net;3032;;0;0

Set as UDP port:

1234, BSV; 114.142.154.28;; 3032;1;1

Or

1234, BSV; www.anytracking.net;;3032;1;1

Delete main server:

1234, BSV;

Query setting:

1234, BSV

5.8 Set Position Report Interval to GRPS Server

Command:

SVP command is to set mode0 (static mode) and mode1 (dynamic mode) report interval to GRPS Server, upload data and data format.

Command format:

<User Password>, SVP; <Mode> ;< Interval> ;< Report mode> ;< Data format>

Parameter description:

<Mode>:

"0": represents statics upload mode.

"1": represents dynamic upload mode.

It is valid only when DNU command enabled.

<Interval>:

Report interval, range is "30 to 900 seconds", "15 to 59 minutes", "1 to 720 hours".

The definition of parameter as follows:

S: Second

M: Minute

H: Hour

<Report mode>:

"O": Disable

"G": Upload GPS information basically, if without GPS signal, it will upload BS information, and BS information show in HEX.

(Set uploads data packet data ID "GPS data" and "GSM data" mask as1.)

"A": GPS and GSM information

<Data format>:

"O": Not generate data.

"B": Binary

"T": Text

Example:

Set static report interval:

1234, SVP; 0; 30S; G; H

Set dynamic report interval:

1234, SVP; 1; 1H; G; H

5.9 Set device dismantled alarm

Command: SEN command can configure and query parameter of dismantling device alarm

Format:

SEN ;< interval checking time> ;< enable switch>

Parameter explanation:

< Interval checking time >: each setting interval time enable one time optical distance detect. Range: 1-1800, unit: second

<Enable switch>：

"0": turn off detection

"1": turn on detection

Example:

Enable the detection interval time of dismantling device alarm.

SEN; 5; 1

![Gosafe logo]

5.10 Set product firmware upgrade

Command: FWU command is to active FOTA firmware upgrade by user phone.

Format:

<User password>, FWU

Example:

1234, FWU

SMS Reply:

G1S V1.00

FWU

BAT=3.30V

#10

FOTA upgrade will take about 10 minutes and you will receive a confirming message.

SMS reply:

G1S V1.10

Upgrade Success!

Ext_BAT=3.95V

BAT=3.30V

#11

6. User Combine Command

The device supports combining multiple commands through an SMS message sent to the device. The commands are separated by a comma. The maximum length of the combined command is 256 bytes. Format is as follows:

User name	Separated Comma	Command 1	Separated Comma	Command 2	Separated Comma	...	Command n
1234	,	UNO;139 12345678	,	UPW; 4567	,	...	USP0; 1;24 H;0;W

Command Reply Explanation:

After the device receives the user's command, it will immediately process and use SMS reply to the user. Reply SMS has two types: command error, command success.

6.1 Command Error SMS

Content of message	Explanation
G1SL V1.00	Device name, Firmware version
ERR	Command Error

6.2 Command Success SMS

Content of message	Explanation
G1SL V1.00	Device name, Firmware version
UPW:1234	Command Setting
Ext_Pwr=11.94V	External power voltage
BAT=3.90V	Built-in battery voltage
#3	Consumed messages

7. SMS Report Explanation

There are two types of SMS reports: interval report and event report. SMS format has "W" and "T" modes. GPS and LBS t types of positioning data.

7.1 "W" Mode Report

Content of message	Explanation
G1SL V1.00	Device name/Firmware version
LTM 2015-02-26 14:17:12	Date/Time
http://maps.google.com/maps?q...	Google map hyper link
ETD:28/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

7.2 "T" Mode GPS Report

Content of message	Explanation
G1SL V1.00	Device name/Firmware version
LTM 2015-02-28 23:51:09	Date/Time
GPS 1.55/0.50/3/4	HDOP/ALTITUDE in meters/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
ETD:28/ACC ON	Event ID/User defined event name
GSM -52dBm	GSM network signal strength
EXT_PWR=12.13V	External power voltage

| BAT=3.96V | Built-in battery voltage |
| #28 | Consumed messages |

7.3 "T" Mode LBS Report

Content of message	Explanation
G1SL V1.00	Device name/Firmware version
LTM 2015-02-28 23:51:09	Date/Time
MCC/MNC/LAC/CID/RSSI	Base station information type
460/0/2503/962C/-53dBm	Main station(MCC/MNC/Local area code/ Station ID/Signal strength)
460/0/2731/40F4/-60dBm	Neighbor station 1
460/0/2703/4050/-70dBm	Neighbor station 2
ETD:28/ACC ON	Event ID/User defined event name
GSM -52dBm	GSM network signal strength
EXT_PWR=12.13V	External power voltage
BAT=3.96V	Built-in battery voltage
#28	Consumed messages

Note:

1. The event report has "Event ID/User defined event name/Data" messages; fixed time report does not have "Event ID/User defined event name/Data" messages.

2. "Date/Time" message, UTC: Greenwich Mean Time; LTM: Local time zone.