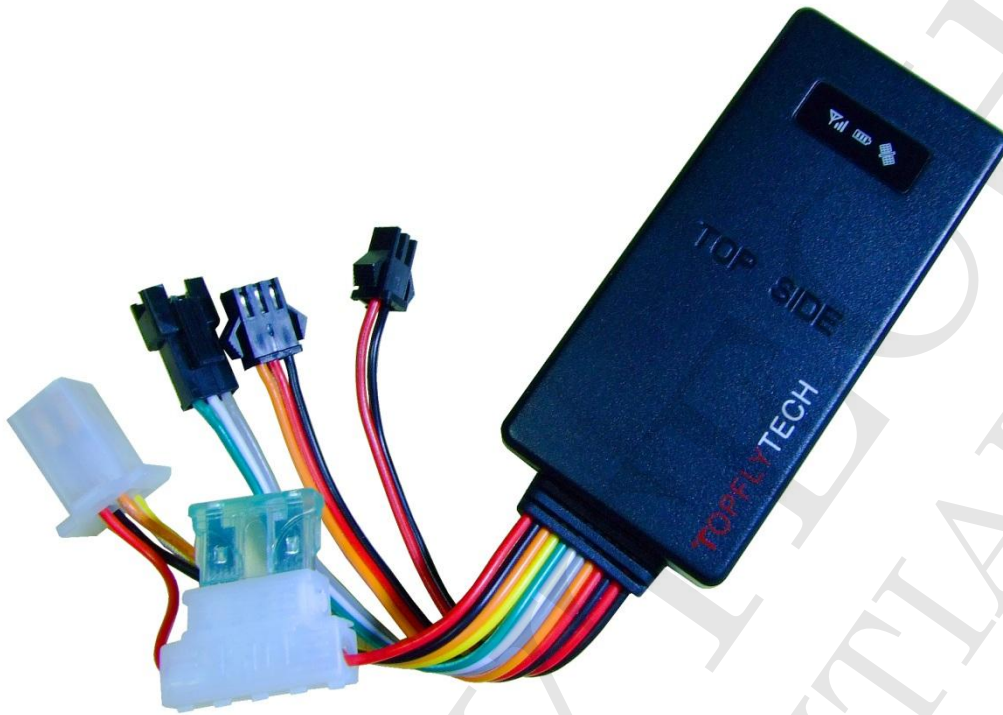


TOPFLYTECH



T8806 Vehicle GPS Tracker (GSM +GPS+SMS/GPRS)

User Manual & Operation Command (SMS)

V1.4

Thanks for your purchase of the high quality GPS trackers from TOPFLYTECH company. Please read this user manual and operation command carefully to obtain guidance on installation and operation. The following describes this device. We will not publish notification should there be cosmetic or color change, actual product prevails.

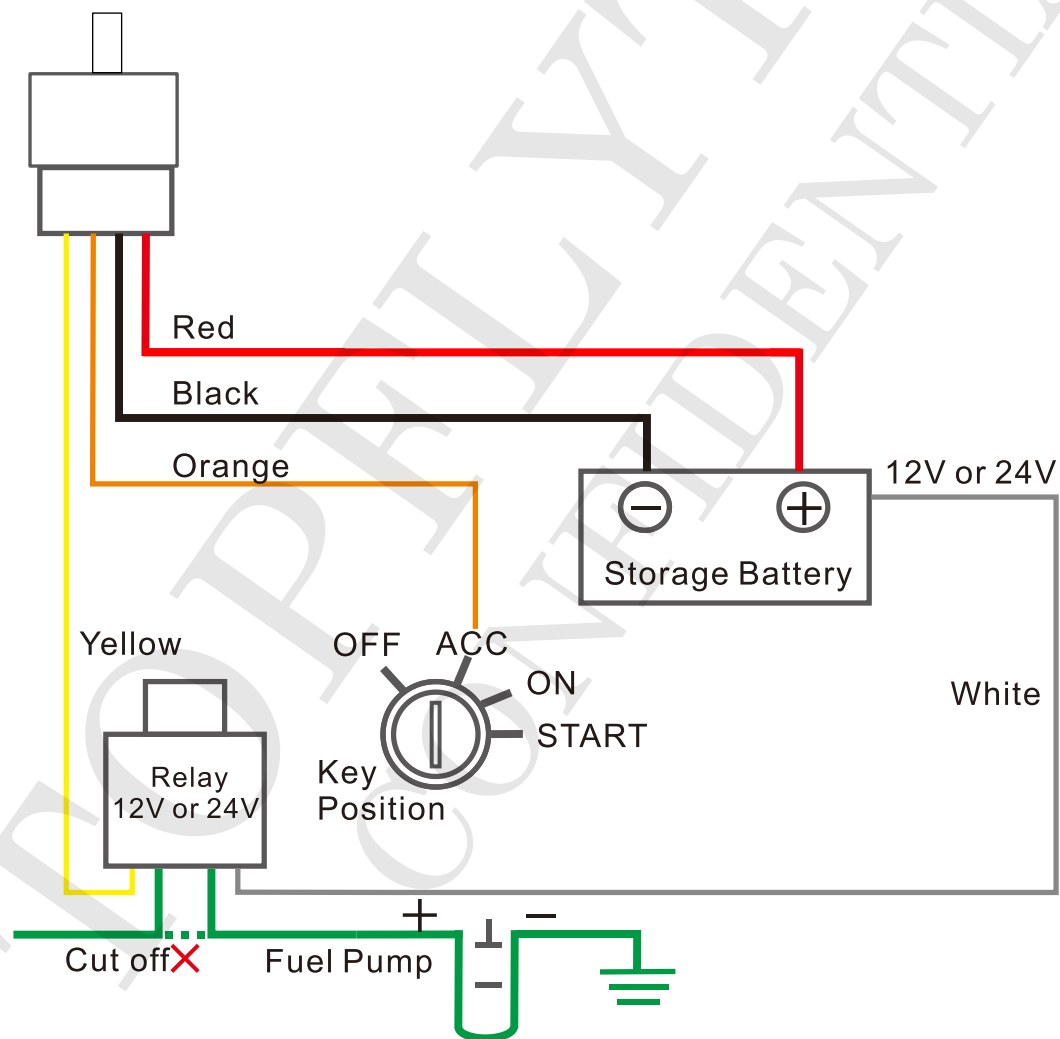
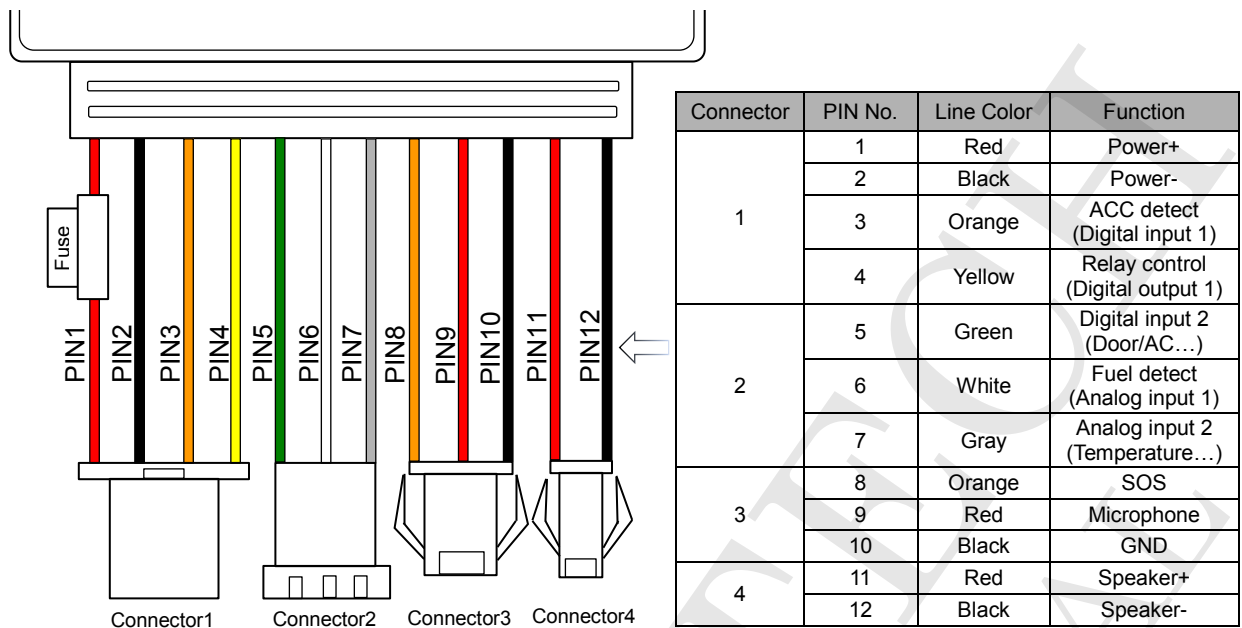
This vehicle GPS tracker product rides on GPRS communication technology, GPS satellite positioning and internet technology. It can realize the real time remote monitoring and control of the vehicle though a powerful service platform (<http://tracker.topflytech.com>). It provides customers with cost reduction, efficiency increased, safety guarantee and transparency management. Currently, it has been widely used in commercial transportation, corporate vehicle fleet, intelligent transportation, logistics distribution, car rental, engineering machinery, marine transportation and other fields.

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Quick Reference of Connection Diagram



1. Product Functions

- Quad band GSM (850/900/1800/1900MHz);
- Wide DC input range: 6-36V;
- GPS continuous positioning, GPRS timing upload;
- Vehicle location tracking;
- ACC ignition signal test, vehicle status prompt;
- AC(Air Conditioner) detection (Car door or any other digital input signal);
- Two-way analog input for Fuel detection, Temperature detection or any other analog input signal;
- SIM credit check (USSD);
- Two-way audio;
- Tow car alarm;
- Antitheft alarm;
- Built-in battery for alarm when the power line is cut off illegally;
- External fuel cut;
- External SOS button for emergency call for help.

2. Accessories Introduction (Pictures for reference only)



Sponge Double-side Adhesive Tape (Standard)



Power Supply Extension Line (Standard)



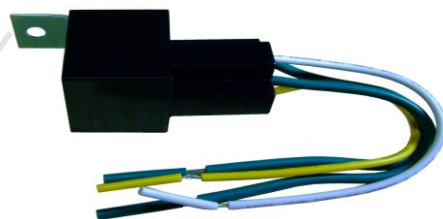
1 Digital Input & 2 Analog Input
Extension Line (Standard)



Speaker Extension Line (Optional)



Microphone & SOS Line (Optional)



Relay (Optional) - 12V/24V

3. Usage Environment

- Operation temp: -20°C ~ 65°C (-4°F ~ 149°F)
- Storage temp: -30°C ~ 80°C (-22°F ~ 176°F)
- Operation humidity: 10% ~ 80% (Non-condensing)
- Storage humidity: 0% ~ 90% (Non-condensing)
- Install in area away from rain or snow

4. Key Technical Parameters

4.1 Basic Parameters

Power Supply	6~36V DC
Built-in Battery Capacity	465mAh/3.7V
GSM Frequency	Quad band (850/900/1800/1900MHz)
Standby Current	5mA/12V, 3mA/24V
Work Current	14mA/12V, 8mA/24V
GPS Frequency	1575MHz
GPS Accuracy	<15m
A-GPS Accuracy	<100m
GPS Sensitivity	-162dBm
GPS Startup Time	Hot start<3S, Warm start<15S, Cool start <60S
Dimension	81*39*13mm
Net Weight	68g

4.2 Indicator Lights Status

1) Orange light (GSM status indicator)

Fast Blink	GSM Network Searching
Slow Blink	GSM Normal Operation

2) Blue light (External Power status indicator)

Fast Blink	External Power Disconnect
Slow Blink	External Power Connect

3) Red light (GPS status indicator)

Fast Blink	GPS Satellite Searching
Slow Blink	GPS Positioning Done

Note:

- Indicator lights go out automatically after the device turn on for 5 minutes. No indicator light prompt.
- If want to check the working status of the device according to the indicator lights, you can dial the phone number of the SIM card which is in the device. Then the indicator lights begin to blink. After 5 minutes, the lights will go out again.
- Slow Blink: Indicator light last for 3 second, then go out for 1 second.
Fast Blink: Indicator light last for 1 second, then go out for 1 second.

5. Installation Manual

5.1 SIM Card Pre-installation Note

- Power off device before installing or removing SIM card.
- SIM card should have its GPRS function enabled.

- 3) Telephone enquiries will function only if Caller ID function is enabled.
- 4) If SIM card is locked via PIN, please to unlock SIM.
- 5) Ensure sufficient store value in SIM card.

5.2 Installation

- 1) Engage technician recommended by your dealer to undertake concealed installation.
During the installation, ensure the device top side (the reception face) face upward.
Secure the device in place with our standard double-side adhesive tape.
- 2) Notes
 - Install in concealed location to prevent theft or damage.
 - Avoid proximity with emission source such as parking sensor, burglar alarm and other communication devices.
 - There is sponge double-side adhesive tape (special for car) as standard accessory for this product. (It should keep the surface clean, dry and smooth. The stickiness will be better after 24 hours). Or use cable ties to secure device in place.
 - Device comes with GSM and GPS antennas. Please ensure reception surface faces upward and not shielded by metallic surfaces. Suggested installation location:
 - Beneath console of front wind screen;
 - Around dashboard (nonmetallic coating);
 - Beneath console of backwind screen.

Note: Thermal screen on windscreen may affect antenna reception causing malfunction.
Please find alternative location.

5.3 Relay Wiring Method

- 1) White line connects to anode of DC power (+12V/+24V), the yellow line connects to the relay control line of the device (yellow line).
- 2) There is oil pump in the oil pipe of the controlled vehicle. Cut off the positive supply of the oil pump. Connect the positive supply of oil pump to one of the green lines. The other end is connected to another green line.

Note: Ensure the voltage of battery and relay compatible to prevent mal-function or damage.
You should check the battery voltage of the engine in advance.
Generally, it is 12V or 24V.

6. Cautions of Device Wiring

6.1 Power Supply Line (Please refer to the Connection Diagram in the first page.)

- 1) Standard voltage supply of this device is 6V-36VDC. Please use factory supply lines.
The red line is positive power supply, the black line is negative power supply.
- 2) Orange line (ACC) connects to ON/OFF switch of vehicle ACC will enable service platform

to access the exact status of ignition switch of the vehicle.

- 3) The oil cut off line (yellow line) connects to the yellow line on the oil cut off line of relay. Secure relay to a dry place using a cable tie. It is also advisable to protect the relay with a plastic bag.

6.2 Microphone Line

External Microphone line (2 Pin) enables remote voice monitoring function.

6.3 SOS Alarm Line

External SOS alarm line (2 Pin) is used for emergency call for help.

6.4 Microphone & SOS Line

External Microphone & SOS Line (3 Pin) is used for Microphone and SOS alarm function.

6.5 Speaker Line

External Speaker line (2 Pin) is used for two-way audio.

7. Device Configuration

Refer to Operation Command in this manual.

8. Operation of Device

8.1 Power On and Power Off

Power On: Insert a SIM card and plug in the main power line. Device turns on automatically.

Power Off: Remove SIM card, disconnect the main power, device power off automatically around 5 ~ 10 seconds.

8.2 Indicator Lights

1) GSM Status Indicator

When device automatically tries to search for GSM network signals, Orange indicator light will be in fast blink. When the device gets the signals and establishes connection to the service provider, Orange indicator light will be in slow blink.

2) External Power Status Indicator

When device is connected to the external power, Blue indicator light will be in slow blink.

When device disconnect from the external power, Blue indicator light will be in fast blink.

3) GPS Status Indicator

When device automatically tries to search for GPS satellite signals, Red indicator light will be in fast blink. When the device gets the satellite signals and the position had been located, Red indicator light will be in slow blink.

The light goes out automatically after the device turn on for 5 minutes. No indicator light prompt. If want to check the working status of the device according to the indicator lights, you can dial the phone number of the SIM card which is in the device. Then the indicator lights

begin to blink. After 5 minutes, the lights will go out again. (This function can be used for checking the signal status of the GSM, GPS and External power connection.)

8.3 Location Search

1) Dial Query

You can dial the SIM card number of the device, hang up in 10 seconds after the ringing, then it will return the location information. But if hang up after 10 seconds, it will get into the monitoring mode automatically.

2) SMS Query

When inquire the location information of the device, you can send a location inquiry SMS to the SIM card of the device, and then the device will return the location information or global coordinates of the last known location of the device.

For the SMS format, please refer to the Operation Command in this manual.

3) Platform Query

User can log on the Global Positioning Service Platform provided by the dealer to access the location of the vehicle. Consult your dealer for web address of the service platform.

8.4 SOS Alarm

During emergencies, press and hold down SOS button for 1 second will activate an SOS alarm to be sent. The device will dial all the preset Manager phone numbers in sequence for 3 times until any one of the Managers answer the call. If no answer after 3 times dialing, it will stop to dial. It will also send SOS SMS to Managers for 1 time. In addition, the device will also send SOS alarm to the service platform.

Note: The Manager phone numbers should be set up first, and then the SMS and SOS function can be activated.

8.5 Monitoring

When preset Manager dials the device, the device will enter into monitoring mode after 10 seconds. Manager can monitor the audio situation of the vehicle. The device will not activate monitoring mode when the incoming call numbers are not those of Manager.

Note:

- 1) If no Manager setting, any telephone calling can dial to monitoring.
- 2) If setting the Manager, only the Manager can dial to monitoring.

8.6 Fuel Cut

When needed, Service Platform or Manager can issue a fuel cut command. Under the premise of safe driving, fuel supply is cut off, disabling the vehicle from being driven. Ensure the vehicle safety, device will cut off fuel supply only when GPS positioning is set and the vehicle speed is lower than 20 km/h. (If the vehicle speed is higher than 20km/h or the GPS positioning is not set, device will return "SET RELAY DELAY, SPEED IS MORE THAN 20KM/H#" or "SET RELAY

DELAY, GPS UNFIXED#". Then device will keep waiting until the vehicle speed is monitored lower than 20km/h, device will return "SET RELAY ENABLE OK, RELAY:1#".)

8.7 Restore Fuel Supply

When needed, Service Platform or Manager can issue a restore fuel supply command.

9. Trouble Shooting

9.1 Unable to Connect to Service Platform

If the device unable to connect to the service platform after the initial installation, please try to inspect device for:

- 1) Is main power supply connected correctly?
- 2) Is SIM card installed properly? Please refer to user manual on this section.
- 3) Inspect the status of the indicators.

Dial the phone number of the SIM card which is in the device. Then the indicator lights begin to blink. Under normal operating condition, Orange GSM indicator, Red GPS indicator and Blue external power status indicator are all in slow blink. After 5 minutes, the lights will go out again.

9.2 Backstage Shows Offline

First check if the indicator lights runs normally. If there is no condition to observe the situation, one can first check SIM card status. The process as follow:

- 1) Dial the SIM card number to listen for ring tone.
- 2) Whether the vehicle in an area with no GSM.
- 3) Observe the area where connection is lost, are all hand held devices in the area affected or just some of them. This will help diagnose whether it is the faulty of the service provider's network.
- 4) Whether your SIM card charge is in arrears.
- 5) If the lost connection happens on the last day of the month, please check whether the GPRS service has been terminated.

9.3 Prolong Inability to Locate

If GPS function of the device had been activated but the device fail to perform location service for prolong period, please inspect the device for the following:

- 1) Is the vehicle located in an area with no GPS satellite coverage?
- 2) Is the reception service facing upwards during installation?
- 3) The device should be installed in an area with no electromagnetic wave absorption material (eg. Metallic sheet) blocking its reception. It is important to note that there is no thermal screen in the windscreen (this thermal screen contains high metallic content that absorbs electromagnetic waves). Failure to do so will affect the integrity of GPS signal, affecting

location accuracy and causing inability to pin point the correct location.

9.4 Severe Drifting in Location

In an area with poor GPS signal reception (area with high rise buildings), severe drifting of the location may happen. Move to an area that is spacious and unblocked by tall buildings to perform accurate locating function.

9.5 Abnormal Command Reception

- 1) Check if the command set is correct.
- 2) Whether the vehicle is in an area with no GSM.
- 3) Inspect to ensure SIM card is properly inserted.

10. Warranty Details

10.1 Special Statement

- 1) Should there be technical change of this device in future, please pardon for not notifying our existing customers.
- 2) Should the external look and color of the device be changed, the actual device will prevail.
- 3) Warranty card is suitable for the warranty of the below mentioned IMEI numbered device.
- 4) Please keep the warranty card. For warranty repair, produce this warranty card together with the purchase receipt from the dealer.

10.2 Warranty Period

Warranty repair is valid for a year from the date of purchase, providing not damaged by user.

10.3 After Sales Service

The following list conditions under which the device outside of warranty period can be repaired with an appropriate fee:

- 1) Warranty period expired.
- 2) Damage caused by unauthorized dismantling and repair of the device.
- 3) Damage caused by improper installation, usage, maintenance and poor handling.
- 4) Torn or illegible product IMEI number label.
- 5) Non-matching of warranty card and product model number or tampering of warranty card.

11. Operation Command (SMS)

Command Instruction

- Command format is no case sensitive.
- Command can be sent via mobile phone or Web. The symbols are English Characters (each 1 byte).
- Command content is separated by comma, end with "#", italics symbols require user input.

- Command set successfully, device will return OK via SMS and execute it; Or there is no message returned, you should set again.

Example: Change device password from factory setting of '0000' to '12345678'.

The command format is: **PASSWORD,0000,12345678#**

Command Setting List

Function	Command Format
APN Setting	APN,Current PIN,APN Name,GPRS User Name,GPRS PIN#
Server Setting	IP,Current PIN,Server Domain Name or IP,Port Number#
Upload Interval Setting	TIMER,Current PIN,Upload Time(ACC on):Upload Time(ACC off):Angle Compensation:Distance Compensation#
Heartbeat Setting	HBT,Current PIN,Heartbeat Interval#
GMT Setting	GMT,Current PIN,Time Zone#
PIN Setting	PASSWORD,Current PIN,New PIN#
Manager Setting	MANAGERA,Current PIN,Manager Code:Manager Phone Number#
Manager Delete	MANAGERD,Current PIN,Manager Code#
Manager List	MANAGERL,Current PIN#
Speaker Setting	SPEAKER,Current PIN,Speaker Status(On/Off)#
Antitheft Setting	ANTITHEFT,Current PIN,Antitheft Status(On/Off)#
Drag Setting	DRAG,Current PIN,Distance#
Speed Limit Setting	SPEED,Current PIN,Upper Speed Limit#
SMS Tracking Mode	TRACK,Current PIN,SMS Tracking Time#
SIM Card Credit Checking	BALANCE,Current PIN,Dialing Number of SIM Card Credit Checking#
SIM Card Credit Checking	FORWARD,Current PIN,Service Center Number,SIM Card Credit Checking Command#
Relay Control (Fuel Cut)	RELAY,Current PIN,Relay Status(On/Off)#
Google Map Search	GOOGLE,Current PIN#
Identity Read Back	MYSELF#

11.1 APN Setting

APN,Current PIN,APN Name,GPRS User Name,GPRS PIN#

APN Name:

Range: APN of service provider

Length Limit: 1 ~ 32

Default: cmnet

GPRS User Name:

Range: Alpha, numeric

Length Limit: 0 ~ 32

Default: <Null>

GPRS PIN:

Range: Alpha, numeric

Length Limit: 0 ~ 32

Default: <Null>

- a. Upon receipt of command set, device will automatically re-connect to server and return message SET APN OK.

Note:

- 1) The APN of different country should be reset according to the operator APN of each country.
- 2) If you only have the APN Name, the SMS setting is: **APN,Current PIN,APN Name#**
- 3) If you only have the APN Name and GPRS User Name, the SMS setting is:
APN,Current PIN,APN Name,GPRS User Name#

11.2 Server Setting

IP,Current PIN,Server Domain Name or IP,Port Number#

Server Domain Name or IP:

Range: Alpha, numeric and symbols

Length Limit: 1 ~ 128

Default: <Null>

Port Number:

Range: Positive Integer

Range limit: 0 ~ 65535

Default: 0

- a. Upon receipt of command set, device will automatically re-connect to server and return message SET IP OK.

11.3 Upload Interval Setting

TIMER,Current PIN,Upload Time(ACC on):Upload Time(ACC off):Angle Compensation:Distance Compensation#

Upload Time (ACC on):

Range: Positive Integer

Range Limit: 0 ~ 65535

Default: 30

Upload Time (ACC off):

Range: Positive Integer

Range Limit: 0 ~ 65535

Default: 600

Angle Compensation:

Range: Positive Integer

Range Limit: 0 ~ 90 degree

Default: 45 degree

Distance Compensation:

Range: Positive Integer

Range Limit: 0 ~ 65535 meters

Default: 2000 meters

- a. Upon receipt of command set, device will return message SET TIMER OK.

11.4 Heartbeat Setting

HBT,Current PIN,Heartbeat Interval#

Heartbeat Interval:

Range: Positive Integer

Range Limit: 0 ~ 255 minutes

Default: 5 minutes

- a. Upon receipt of command set, device will return message SET HBT OK.

11.5 GMT Setting

GMT,Current PIN,Time Zone#

Time Zone:

Range: Floating point

Range Limit: -12.0 ~ 12.0

Default: 8.0

- a. Upon receipt of command set, device will return message SET GMT OK.

11.6 PIN Setting

PASSWORD,Current PIN,New PIN#

PIN:

Range: Alpha, numeric

Length Limit: 1 ~ 10

Default: 0000

- a. Upon receipt of command set, device will return message SET PASSWORD OK.

11.7 Manager Setting

MANAGERA,Current PIN,Manager Code:Manager Phone Number#

Manager Code:

Range: Positive Integer

Range limit: 1 ~ 4

Manager Phone Number:

Range: Phone number

Length Limit: 0 ~ 40

Default: <Null>

- a. Upon receipt of command set, device will return message SET MANAGERA OK.

Note: Set the Manager phone number with appointed code, the max Manager number is 4.

11.8 Manager Delete

MANAGERD,Current PIN,Manager Code#

Manager Code:

Range: Positive Integer

Range limit: 1 ~ 4

- a. Upon receipt of command set, device will return message SET MANAGERD OK.

11.9 Manager List

MANAGERL,Current PIN#

- a. Upon receipt of command set, device will return message SET MANAGERL OK.

Note: All the Manager phone numbers will be listed.

11.10 Speaker Setting

SPEAKER,Current PIN,Speaker Status(On/Off)#

Speaker Status:

Range: Positive Integer

Range limit: 0 ~ 6

Default: 0

- a. Upon receipt of command set, device will return message SET SPEAKER OK.

Note:

0: Means turnoff speaker;

1-6: Means sounds volume, 1 is the lowest level, 6 is the highest level.

11.11 Antitheft Setting

ANTITHEFT,Current PIN,Antitheft Switch(On/Off)#

Antitheft Switch:

Range: Positive Integer

Range limit: 0 or 1

Default: 0

- a. Upon receipt of command set, device will return message SET ANTITHEFT OK.

Note: This function is only effective when ACC off.

11.12 Drag Setting

DRAG,Current PIN,Distance#

Distance Range:

Range: Positive Integer

Range limit: 0 ~ 65535 meters

Default: 0

- a. Upon receipt of command set, device will return message SET DRAG OK.

Note:

- 1) This function will be started automatically when ACC Off.
- 2) We suggest the distance setting is no less than 100meters.

11.13 Speed Limit Setting

SPEED,Current PIN,Upper Speed Limit#

Upper Speed Limit (km/hr):

Range: Positive Integer

Range limit: 0 ~ 32767

Default: 0

- a. Upon receipt of command set, device will return message SET SPEED OK.

Note: Set “Upper Speed Limit” to zero will turn off Speed Alarm.

11.14 SMS Tracking Mode Setting

TRACK,Current PIN,SMS Tracking Time#

SMS Tacking Time Range:

Range: Positive Integer

Range limit: 0, 1, 2 ~ 65535 Seconds

Default: 0

- a. Upon receipt of command set, device will return message SET TRACK OK.

Note:

1) SMS Tracking Time:

0: GPRS tracking mode

1: No GPRS tracking mode

2 ~ 65535: SMS tracking mode

11.15 SIM Card Credit Checking

BALANCE,Current PIN,Dialing Number of SIM Card Credit Checking#

- a. Upon receipt of command set, device will return message SET BALANCE OK.

- b. Then it will return the SIM card credit checking result.

FORWARD,Current PIN,Service Center Number,SIM Card Credit Checking Command#

- a. Upon receipt of command set, device will return message SET FORWARD OK.

- b. Then it will return the SIM card credit checking result.

Note: Please choose one of the above two commands according to your local conditions.

11.16 Relay Control (Fuel Cut)

RELAY,Current PIN,Relay Status(On/Off)#

Relay Status:

Range: Positive Integer

Range limit: 0 or 1

Default: 0

Note:

- 1) Relay status
 - 1: Fuel cut;
 - 0: Fuel supply restore.
- 2) If the vehicle speed is higher than 20km/h or the GPS positioning is not set, device will return "SET RELAY DELAY, SPEED IS MORE THAN 20KM/H#" or "SET RELAY DELAY, GPS UNFIXED#". Then device will keep waiting until the vehicle speed is monitored lower than 20km/h, device return "SET RELAY ENABLE OK,RELAY:1#".
- 3) If recover the fuel, device will return "SET RELAY DISABLE OK,RELAY:0#".
- 4) In order to ensure the vehicle safety, we set the speed with 20km/h.

11.17 Google Map Search (Already Built-in)**GOOGLE,Current PIN#**

- a. Upon receipt of command set, device will return the following:

<http://maps.google.com/maps?q=<Latitude>, <Longitude>>

11.18 Identity Read Back**MYSELF#**

- a. Upon receipt of command set, device will return the following:

Imei: <IMEI>

Password: <Current PIN>

Note:

- 1) If the tracker has been set with the Manager phone number, only the Manager can use "MYSELF#". If no Manager setting, the device will return the IMEI and current PIN when it received "MYSELF#" from any mobile phone.
- 2) This command can be used to retrieve password.

FCC Caution.

§ 15.21 Changes or modification warning

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

§ 15.105 Information to the user.

Note: 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.

***RF warning for Mobile device:**

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.