GSM / GPRS / GPS VEHICLE TRACKER XT-009

<u>Preface</u>

Thank you for purchasing our GPS vehicle tracker. This manual shows how to operate the device smoothly and correctly. Please read this manual carefully before using it. Please note that specification and information are subject to changes without prior notice in this manual. Any change will be integrated in the latest release. The manufacturer assumes no responsibility for any errors or omissions in this document.

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1. Overview of function

- SMS/GPRS sending data
- Movement/ Geofence/ Speed/ Low battery alarm
- ACC alarm
- SOS alarm
- Remote cut-off electricity &oil function
- Collision vibration alarm (Crash alarm)
- Voice monitoring
- Main power disconnect alarm
- SD card saves GPRS data
- OTA function (firmware update over the air)
- Distance limit data transmission
- Waterproof IP67

COMANDOS SMS MÍNIMOS
DE CONFIGURAÇÃO

begin123456
time zone123456 -3
adminip123456 167.99.234.175 21371
apn123456 tim.br
apnuser123456 tim
apnpasswd123456 tim
t060s***n123456
tracker123456

2. Application

- Vehicle/motorcycle rental
- Ship tracking
- Fleet management
- Tracking an offense

3. Hardware description

3.1 Outside

SOS Button

Microphone

Working LED

Power LED
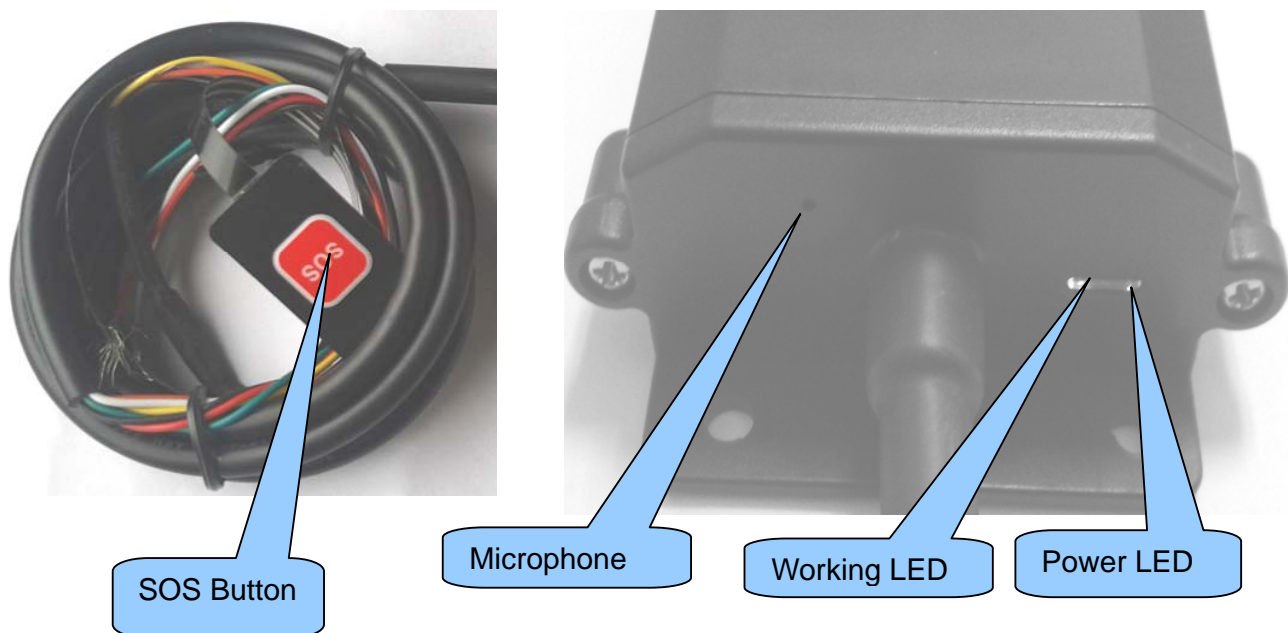
3.2 Internal mainboard

SD card

SIM card

4. Wires connection

White connects to Relay

Green connects to ACC

Black: -12V

Red: +12V

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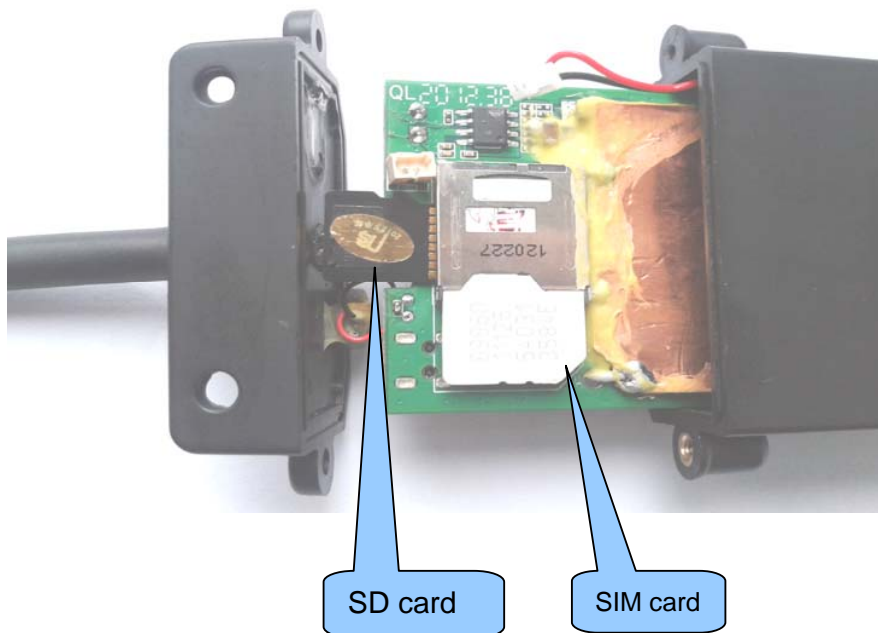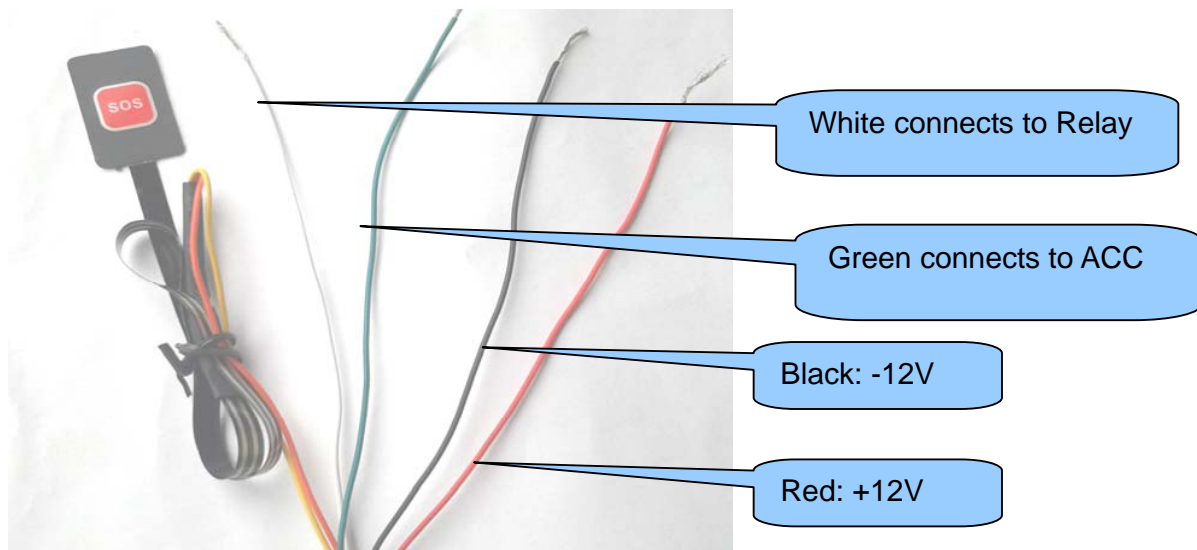
5. Specification

Content	specs
Dimention	73*46*24(mm)
Weigh	50g
Network	GSM/GPRS
Band	850/900/1800/1900Mhz
GPS chip	SIRF3 chip
GPS sensitivity	-159dBm
GPS accuracy	5-10m
Start-up time	Cold status 45s Warm status 35s Hot status 1s
External power supply	DC6-36V input
Battery	3.7V 1200mAh battery
Standby	120hous
Storage Temp	-40°C to +85°C
Operation Temp	-30°C to +80°C
Humidity	5%--95% non-condensing

6. Battery and SIM Card installation

Make sure SIM card have no call transfer, show calling ID is actived and PIN code request is off

1. Open two screws

2. Insert the SIM card and SD card

Open screws

Insert SD card

Insert SIM card

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Connect the battery

Closes the screws
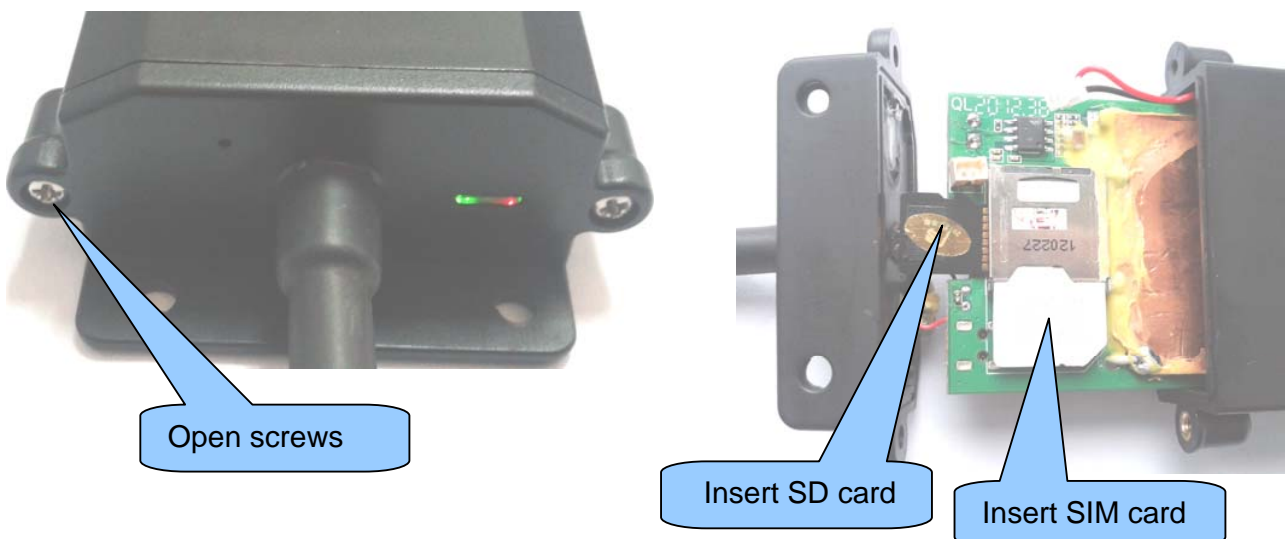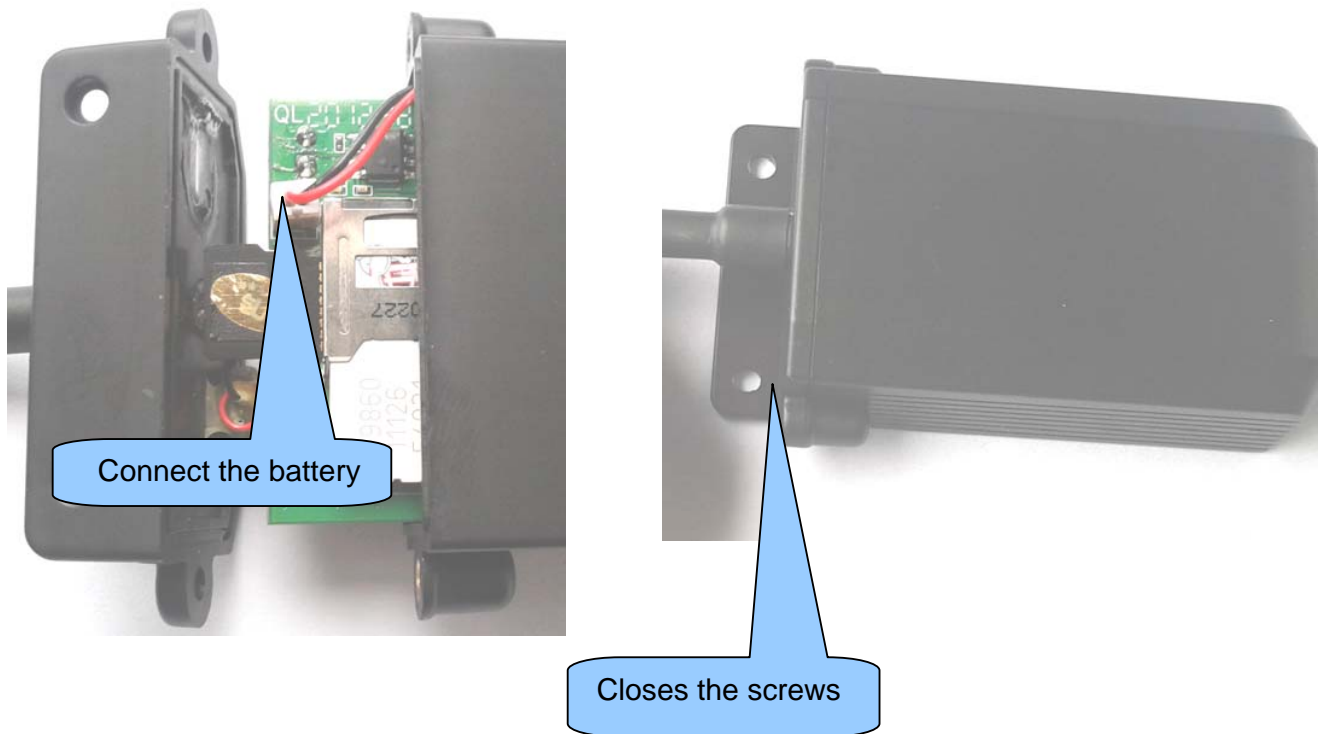
7.Startup

● Put the SIM card and SD card in right places,connect the battery to tracker or connect the tracker to 6-36Vcar/motorcycle battery. it will turn on automatically. the red light will on if connect tracker to 6-36V car/motorcycle battery, it will off if disconnect.

● The green light will blink 2 times per second after start up. after 20-30 seconds, the light will on 1 seconds, off　3 seconds, GSM signal working normal.

● It takes 40~90 seconds to receive the GPS signals, in order to get good GPS signals, please put the tracker outdoor.

8.Usage

This product has two modes, **tracker and monitor**, the default mode is tracker mode, you can send SMS **monitor + password** to switch to monitor mode and then send **tracker + password**　to switch back to tracker mode.

9. Tracker mode

9.1 Initialization

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Send **begin + password** to the tracker, it will reply **begin ok** and initialize all settings.

```
TO:13188888888
begin123456
```

```
From:13188888888
begin ok
```

9.2 Changer password

Send SMS **password+old password+space+new password,** it will reply password OK.

the default password is 123456

```
To:13188888888
password123456 888999
```

```
From:13188888888
password ok
```

9.3 Set authorized number

● Send SMS **admin+password+space+cellphone number** to set up the first authorized number.

it will reply admin ok. Other authorized numbers must be set by the first authorized number.

Max 5 authorized numbers.

```
To:13188888888
admin123456 131666666
```

```
From:13188888888
Admin OK
```

● Send SMS **noadmin+password+space+authorized number** to cancel an authorizated number

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```
TO:13188888888
noadmin123456 3166666666
```

```
TO:13188888888
noadmin ok
```

9.4 SMS format

You can see an example of SMS you receive from tracker:

Lat: 22.566901 long: 114.051258 speed: 0.00 14/08/09 06.54 F:3.85V,1,Signal:F

imei:354776031555474 05 43.5 460 01 2533 720B

lat:**[latitude]** long:**[longitude]** speed:**[speed] [date] [time]** F:**[battery voltage]**V,**[charging status]**,Signal:**[GPS signal status] [alarm message]*** imei:**[imei number] [number of fixed satellites] [altitude] [MCC] [MNC] [LAC] [CellID]**

[latitude]	GPS received latitude
[longitude]	GPS received longitude
[speed]	GPS received speed
[date]	GPS received date
[time]	GPS received time
F:[battery voltage]V,	battery voltage
[charging status]	"1" in charge, "0" no charge
Signal:[GPS signal status]	"F" GPS fix, "L" no GPS fix
[alarm message]	it indicates alarm type (help me!, moved, Speed etc.) Just ignore this section if no any alarms
imei:[imei number]	The identify number of GSM module
[number of fixed satellites]	GPS satellite fixed number
[altitude]	GPS received altitude
[MCC]	Mobile Country Code
[MNC]	Mobile Network Code
[LAC]	Location area Code
[Cell ID]	GSM cell identities

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9.5 Auto-track

● Send SMS t030s005n+password to the unit, it will report the Geo-info at 30s intervals for 5
   times(s: second, m: minute, h: hour).

● The setting must be in 3 digits and at maximum 255 in value.

To:13188888888	From:13188888888
T030s***n123456	T030s***n ok

● Send SMS t030s***n+password to the unit, it will reply SMS heaps of times

● Cancel: Send notn+password to delete the " auto track "

   Remark: the interval must not be less than 5s.

9.6 Tlimit function

● Set up: Send SMS **tlimit123456 50** , it will reply "tlimit ok" , you also can change to the other
   meters, like 100, 500 or 1000, the maximum is 6000meters, this function should use with
   auto-track together.
   If the tracker stop moving, it will not send any data to cellphone or server, until the distance is
   more than 50 meter.
● Cancel : Send SMS **tlimit123456 0** to cancel tlimit function

9.7 Geo-fence

● Setup: Send SMS **stockade+password+space+longitude,latitude; longitude,latitude** to
   the unit to set the restricted district.   The unit will send message to the authorized numbers
   when it moves out of this district.
● Cancel: Send SMS "nostockade+password" to deactivate this function.It will reply
   "nostockade ok"。

● This function will be invalid if the unit move outside the district. You need to re-set it if you want
   this function again.
● The first longitude & latitude is coordinate of the top left corner of the Geo-fence, while the
   second longitude & latitude is the coordinate of the bottom right corner.

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To:13188888888
stockade123456
114.124845E,22.567185N;114.777888E,22.555666N

From:13188888888
stockade ok

From:13188888888
lat: 22.566923 long: 114.051331 speed: 0.00 28/11/10 03:33 F:4.32V,0, Signal:F stockade imei:359587011016261 05 41.5 460 01 2533 720B

TO:13188888888
nostockade123456

From:13188888888
nostockade ok

9.8 Movement alarm

This function is using for the owner to get alarm when the tracker moves out of a restricted district.

● Setup: Send SMS **move+password** to the unit to set the movement alert,it will reply move ok

TO:13188888888
move123456

From:13188888888
move ok

● Cancel: Send SMS **nomove+password** to deactivate the movement alert,it will reply nomove

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ok

This function will be invalid after getting one movement alert

Response SMS format: :move!+geo-info. It will alarm one time in each setting.

9.9 Overspeed Alert

This function is used to control the user's driving speed.

Setup: Send SMS **speed+password+space+ the speed**, For example: speed123456 080,it will reply" speed ok"

```
TO:13188888888
speed123456 080
```

```
From:13188888888
speed ok
```

● Cancel: Send SMS"**nospeed+password** "to deactivate the overspeed alert,it will reply" nospeed ok。"

```
TO:13188888888
nospeed123456
```

```
From:13188888888
nospeed ok
```

● Response SMS format: speed+080!+Geo-info (suppose the speed is 80km/h).
The tracker will check the speed in 3 minutes interval and alarm if it is overspeed.

```
From:13188888888
lat: 22.566923 long: 114.051331
speed:  0.00   28/11/10   03:33
F:4.32V,0,    Signal:F    speed
imei:359587011016261  05  41.5
460 01 2533 720B
```

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Remark: It is recommended that the speed alarm is set at 30-200km/h

9.10 IMEI check

Send SMS" imei+password: to the unit,it will reply imei350001122222222 ok.

```
TO:13188888888
imei23456
```

```
From:13188888888
imei350001122222222
ok
```

9.11 Firmware version check

Send SMS **version +password** to the unit，it will reply the firmware version, like XT009 V1.1 OK

9.12 Time Zone setting

Send "time zone+password + GMT time ,reply "time zone ok". (note: if GMT time is positive, just write the number 1. If time zone is negative, have to write –1)

```
TO:13188888888
Time zone23456 1
```

```
TO:13188888888
Time zone23456 -1
```

```
From:13188888888
time zone ok
```

9.13 SOS button

● If you press SOS button for 3 seconds, tracker will send SOS SMS to all authorized numbers.

Alert SMS format:

```
From:13188888888
  lat: 22.566923 long:
  114.051331 speed: 90.00
  28/11/10 03:33 F:4.32V,0,
  Signal:F help me
  imei:359587011016261 05
41.5 460 01 2533 720B
```

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9.14 SMS LINK

● Send SMS "**smslinkone+password**", the tracker will reply only one google map link to the cellphone immediately .The position can be checked directly on a smartphone

Google map link Format：
http://maps.google.com/maps?f=q&hl=en&q=22.567610,114.051227&speed: 0.00 12/11/10 14:36
F:4.22V   Signal:F   imei:012207000691839

● Send SMS"**smslink+password**", it will reply "smslink OK" . after that, when you call the tracker, it will reply you a google map link sms

● Send SMS "**smstext+password**", it will reply "smstext OK". The tracker will reply text SMS to cellphone

9.15 SMS ONE

Send SMS"**smsone+password**".The tracker will only send one text SMS to the cellphone or server.

9.16 Low Battery Alert

When the battery inside is less than 3.7 V, it will send low battery alert to admin number

9.17 SMS Center

● Setup: Send SMS **adminsms+password+space+cell phone number** to setup the SMS center.
  The tracker will reply Geo-info & authorized number to sms center number even if the admin numbers call or send command to the tracker
● Cancel: Send SMS **noadminsms+password** to cancel the SMS center.

Note:
● The SMS message must in Text format, can't be identified for PDU format.
● Please use the tracker outside for the first time so that it can get gps signal easily and quickly

9.18 GSM ID

GSM ID is in each sms or gprs data. The tracker can be found by GSM ID without gps signal. But

the customers have to ask their GSM operator for data base of the GSM ID.

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9.19　Motion Sensor

- Setup: Send SMS **shake+password+space+1-10** to the tracker to set up this function (1-10 means the level of intensity)
- Send SMS **shake+password+space+1** is the least sensitivity . Have to shake the tracker strongly to get the alert.
- Send SMS **shake+password+space+10** is the most sensitivity . Have to shake the tracker slightly to get the alert
- Cancel: Send SMS **shake+password+space+0** to remove this function.

9.20 SD card

A mini SD card can be put in the tracker's SD card slot. The GPRS data can be saved in the SD card if GPRS is off. It will send data to the GPRS server again when it is on.

- Setup: Send SMS **sdlog+password+space+1** to activate the sd card-saving function

- Cancel: Send SMS **sdlog+password+space+0** to the tracker to deactivate this function

9.20.2 Setup: Send SMS readsd+password+space+1 to ask the tracker to send data in the SD card to the GPRS server.

Cancel: Send SMS readsd+password+space+0 to ask the tracker to stop sending data in the SD

card to the server.

9.21 ACC status alert

ACC green wire connect　to the car's ACC　wire ,when ACC is on ,the tracker will send "accstart " ,when ACC is off ,the tracker will send "accstop "

- **Alarm format**：lat: 22.566923 long: 114.051331 speed: 90.00 28/11/10 03:33 F:4.32V,0, Signal:F **ACCstart**　imei:359587011016261 05 41.5 460 01 2533 720B

- **Alarm format**：lat: 22.566923 long: 114.051331 speed: 90.00 28/11/10 03:33 F:4.32V,0, Signal:F **ACCstop**　imei:359587011016261 05 41.5 460 01 2533 720B

(Note: each time when the ACC status changed it'll send alarm)

9.22. Remote oil & electricity cut-off function

This function is using for the car owner to send a SMS remotely to stop a moving vehicle. Please note that in certain country you cannot cut car main power cable.

- Setup: Send SMS : **powercar+password+space+11** it will reply "power car　OK" cut off　car oil and electricity .

- Cancel: Send SMS **:powercar +password+space+00** it will reply "power car　OK" restart car again.

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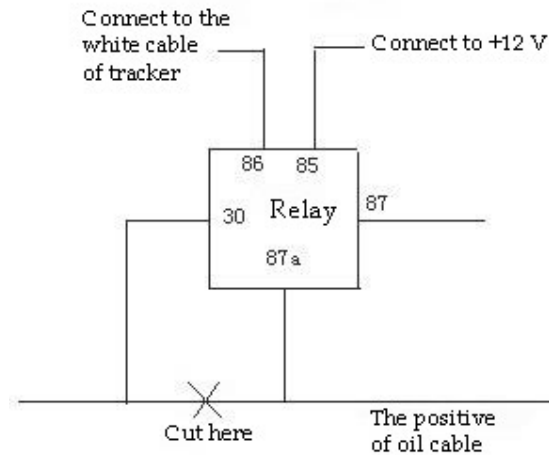
9.23 OTA feature

Can update firmware remotely   when the GPRS and SD card work normally

- Setup: Send SMS ：**fota +password+ ,ftp,v120705.bin,121.37.40.240,user,+888999+,21**

it will reply "fota   OK"

v120705.bin,   is the name   of the file which you need upgrade，
121.37.40.240,   is a remote server IP address，
user,   is a remote server user name，
888999,   is a remote server password，
21   is a remote server port,
(Note: each is separated by "**,**")

Since receive "fota OK",the tracker starts downloading the file   waiting   about 5 minutes later the platform receive "**Download successful! Restarting…**" it means download file successful, then the tracker start update firmware   automatically ,after 2 minutes later   the platform   receive "**Remote upgrade successful !!!**"it means upgrade firmware   successfully.

10. Monitor mode

- Setup: Send SMS : **monitor +password**   it will reply "monitor   OK"
  When you call tracker, you can hear voices and sounds around tracker.

- Cancel: Send SMS **:tracker +password**   it will reply "tracker   OK"
  Transfer to tracking mode .

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11. GPRS set

● Set IP address and port

Send SMS

adminip+[password]+*space***+[IP address]+***space***+[port]**

Tracker will reply with SMS ***"ADMINIP ok!"***

Cancel

Send SMS

noadminip+[password]

● Set APN

Send SMS

apn+[password]+*space***+[APN]**

Tracker will reply with SMS ***"APN ok!"***.

Cancel

Old APN will be deleted automatically when you set a new APN.

● Set APN User Name

Send SMS

apnuser+[password]+*space***+[APN user name]**

Tracker will reply with SMS ***"APNUSER ok!"***.

Cancel

Old APN user name will be deleted automatically when you set a new APN user name.

● Set APN Password

Send SMS

apnpasswd+[password]+*space***+[APN password]**

Tracker will reply with SMS ***"APNPASSWORD ok!"***.

Cancel

Old APN password will be deleted automatically when you set a new APN password.

After you set IP & Port & APN & APN user name & APN password, you can use the tracker as describe in monitor or Tracker mode. Tracker will report the GPS data to server by GPRS.

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Tracker sends message to server using this format:

[serial number],[authorized number],[GPRMC],[type of fix GPS],[message],imei:[imei number],[number fix satellites],[altitude],[battery status],[charging status],[Length], [crc16],[MCC],[MNC],[LAC],[CellID]

[serial number]	GPS date+GPS time
[authorized number]	Tracker authorized number
[GPRMC]	Nmea GPS info string
[type of fix GPS]	"F" GPS fix, "L" no GPS fix
[message]	it indicates message type (help me!, speed, moved, etc.)
imei:[imei number]	The identify number of GSM module
[number fix satellites]	GPS satellite fixed number
[altitude]	GPS received altitude
[battery status]	"F:4.11V" full battery, "L:3.65V" low battery
[charging status]	"1" in charge, "0" no charge
[GPSlen]	GPS string length
[crc16]	CRC16 checksum
[MCC]	Mobile Country Code
[MNC]	Mobile Network Code
[LAC]	Location area Code
[CellID]	GSM cell identities

For example:
090907070718,13145826175,GPRMC,070718.000,A,2234.0228,N,11403.0764,E,0.00,,07090 9,,,A*73,F,,imei:354776030042714,05,50.1,F:4.11V,0,132,40512,460,01,2533,720B

Notes:

- GSM ID can be added or deleted according to customer's requirement.

- Our tracker supports TCP or UDP protocol: please confirm what protocol you need before order.

- Please use SIM card with GPRS function.

12 Cautions

Comply with instructions for use will extend the product life cycle.

- 1. Keep the unit dry. Any liquid as rain, moisture, etc, may destroy or damage electronic mainboard.
- Don't use or store tracker in dusty places.

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- Don't put tracker in overheated or overcooled places.
- Handle carefully.
- Don't vibrate or shake it violently.
- Clear tracker with a piece of dry cloth. Don't clean using chemicals detergent.
- Don't paint tracker: this may cause some foreign materials left in between parts.
- Don't disassemble or refit tracker.
- Please use battery (and charger if you need) provided by manufacturer. Using other batteries and chargers will cause unwanted situation.
- Don't dismount antenna randomly, or use different antennas. This may interfere transmission, and increase radiation as well.

13 Faults and solutions

Faults	Solutions
Startup fail	Check battery charge or battery correct installation
Hangup fail	If authorized number is set, an unauthorized number call tracker. Please initialize tracker and re-setup correct authorized number
Monitor fail	Check if authorized number is setup or GSM intensity level
Indicator keep on flashing quickly	Check SIM card to see if it is put in correct place
SD card storing data fail	Check SD card to see if it is put in correct place.
Location report in zeroes digits	Tracker has no GPS fix: place tracker outdoor, especially when starting it up

Notes:
- Tracker can send alarm SMS one time for each alarm event, or many time for each alarm event, according to customer's requirements.

- Tracker supports receive commands by GPRS server or by USB cable, with same syntax of SMS commands.

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14.The diagram of the relay

2 sronger red wires conne connects the + of the gasoline

thin red wire connects +12V

White wire connects the tracker

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