

# GPS Tracker User Manual



Thank you very much for purchasing our GPS locator. The user manual will explain in detail how to operate this product. Therefore please be sure to read it carefully before using the product. Subject to change without prior notice, each change will be published in the latest product sale. The manufacturer assumes no legal responsibility for errors and omissions in this manual.

# 1 Specifications

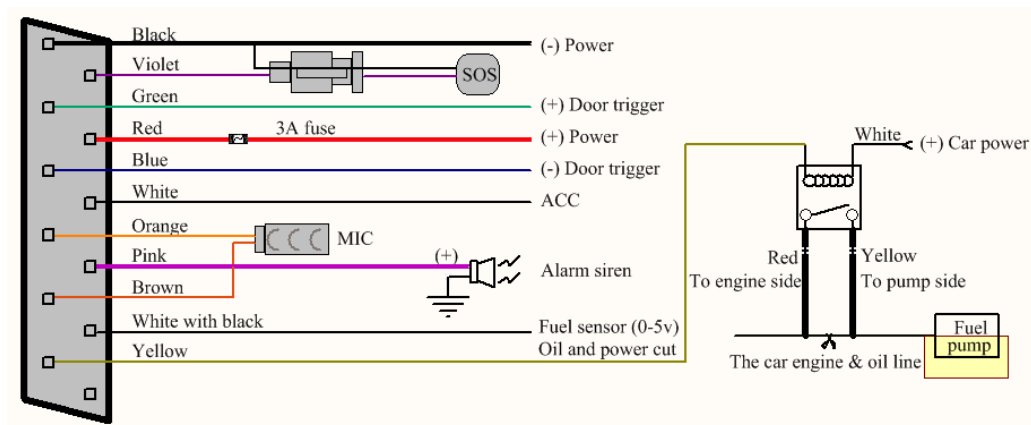
Product name	GPS Tracker
Model	303FG-new
DIM.	9.6×5.3×1.6cm
Weight	70g
Network	GSM/GPRS
Band	850/900/1800/1900Mhz
GPS sensitivity	-165dBm
GPS accuracy	5m
Time To First Fix	Cold status 45s Warm status 35s Hot status 1s
Applicable car power	12V-24V
Battery	Chargeable 3.7V 300mAh Li-ion battery
Storage Temp.	-40 ℃ to +85 ℃
Operation Temp.	-20 ℃ to +45 ℃
Humidity	5%--95% non-condensing

# 2 Hardware Description



# 3 Terminal Installation

1. Please ask a qualified engineer to install it.
2. The installation environment should ensure that the GSM and GPS signals are good
3. Please do not install it in a dusty and humid environment.
4. Find the 12PIN wiring harness provided with the product, insert it into the corresponding wiring hole of the product, and connect to the original car circuit as shown in the following Wiring Diagram:



5. The pink wire can be connected to the original car alarm horn or the alarm horn purchased together.
6. Understand that the vehicle door trigger type is positive trigger or negative trigger. Connected to the green wire if it is positive trigger, and connected to the blue wire if it is negative trigger.
7. Please install the SOS button where the driver can touch it.
8. SIM card installation

Please use the included screwdriver to open the case to insert the SIM card. If you intend to expand the storage space, then please insert micro SD and then assemble the case.

Please be sure to confirm that the SIM card network frequency band is the network frequency band supported by the device. Caller ID must be turned on and the PIN code must be turned off. The call forwarding function cannot be turned on.



9. After inserting the SIM card, connect the positive and negative (red and black) wires of the power supply to the 12V or 24V power supply of the car. Wait the device works normally After 1 minute of power-on, and then turn on the Backup battery switch.

## 4 Device Status Light

**Red light:** Always on when charging, and turns off after being fully charged. Red light flashes quickly when battery is low.

**Green light:** Flashes every 1 second when GSM network signal normally, flashes every 3 seconds when works in GPRS mode; always on when no GSM network.

**Blue light:** Flashes every 1 second when GPS signal is normal; flashes 3 times per second when GPS signal is very good, and turns off if lost fix to satellites.

## 5 This GPS Tracker Supports Mobile APP, Web Server

### Platform,Bluetooth and SMS for Management in Multiple Ways

If you use the APP and web platform, you need a sim card to open a data plan or use a data card.

If you use SMS, you need a SIM card to enable SMS, voice calls, and caller ID.

## 6 Mobile APP

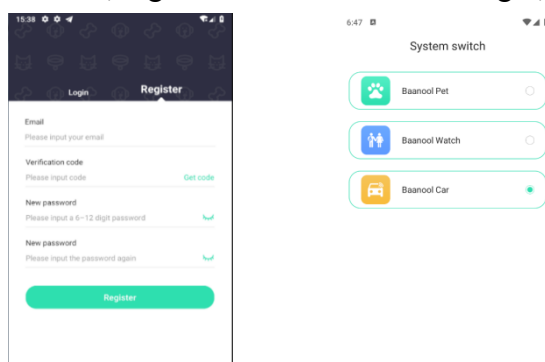
## Scan the QR code to download APP



Google Play、App Store search “BAANOOL IOT” to download it

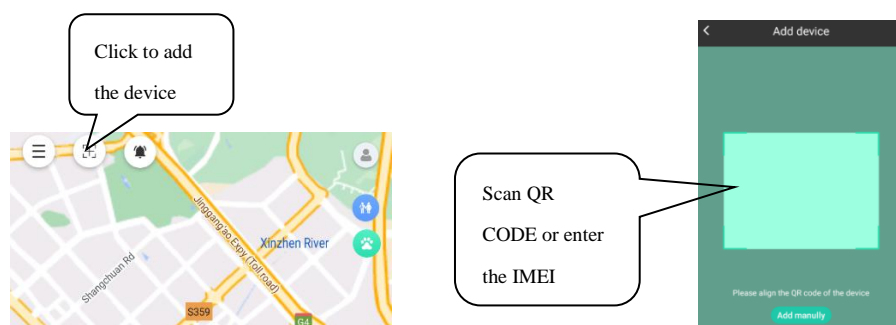
## Register

Open BAANOOL IOT, register a new account and login, Choose “BAANOOL car “to enter it.



## Bind Device

Click the ‘Add Device’ button on the home page and scan the IMEI number to bind a new device. Note that the IMEI number is attached to the side of the device, and the IMEI of the device can also be manually entered for binding.

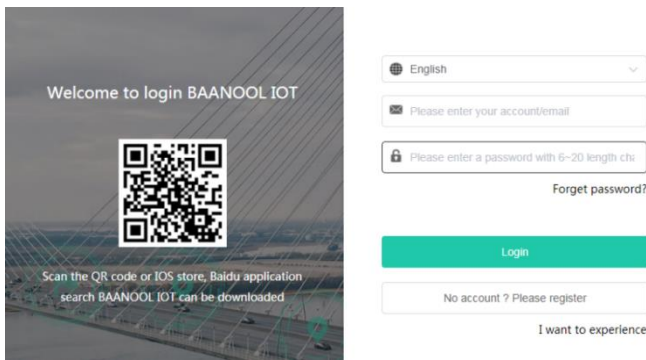


## Using tracker

Under normal circumstances, the device can automatically select the APN, username and password without setting it. If the device is still offline after 3 minutes of binding, you need to set the APN and username and password in Bluetooth or SMS according to 11.17 and 11.18. After the device comes online, you can view and manage the device.

## 7 BAANOOL IOT's Web Version

Open [www.baanooliot.com](http://www.baanooliot.com), the login account name and password are the same as phone app's



## 8 Mobile APP and BAANOOL IOT's Web

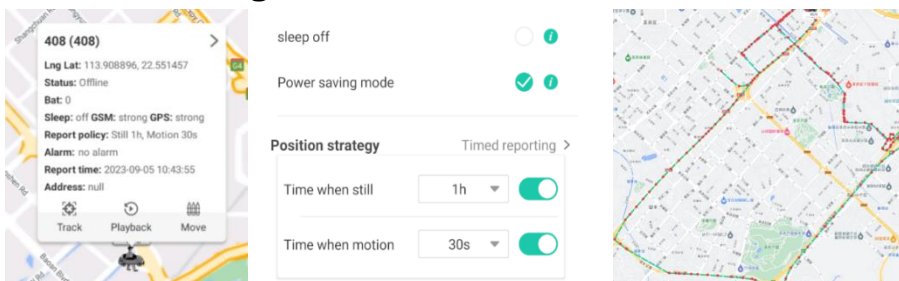
### 8.1 Positioning strategy

You can click the positioning button to select the working mode and positioning strategy. When stationary, you can set a longer period of time to report location information (such as 1 hours), and when it moving, you can set a short period of time to report location information frequently (such as 10 second). When the tracker moves, the movement trajectory will be displayed.

#### 8.1.1 Working mode

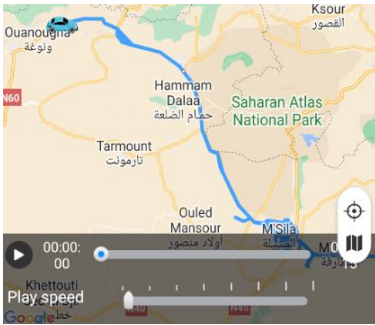
Working Mode	Description
Real time online	The device is online in real time and reports its location according to the set motion/stationary intervals. The device is online in real time by default and reports its location at intervals of 10 seconds of movement and 1 hour of inactivity.
Smart mode	Offline when stationary (phone calls, text messages, and alarms can trigger the device to go online. After SOS, door opening alarms, and ACC alarms are triggered, the device will be online in real time until the alarm is lifted). Wake up and go online when in motion. Regardless of whether it is stationary or moving, the device will report at the set interval. Location.

#### 8.1.2 Positioning interval



### 8.2 Playback

You can click the playback button to view the historical track record



## 8.3 Remote immobilizing

Delayed immobilizing, Immobilizing immediately, Resume fuel and power supplying

## 8.4 Arm/ Disarming

Arm, silent arm, disarm.

## 8.5 Alarm function in arming state

### 8.5.1 Door open alarm

When the system is in the armed state and the car door is illegally opened, the device will trigger the door open alarm and the alarm siren will beep for 20 seconds. If the door has been illegally opened, the alarm siren will beep continuously at 20-second intervals. Disarming can stop the alarm.

### 8.5.2 ACC alarm

When the tracker is in the armed state, turn the starter key to the ACC ON position or start the vehicle directly. The device will trigger the ACC ignition alarm and the alarm siren will beep for 20 seconds. If it is in the illegal ignition state, the alarm siren will beep continuously at 20-second intervals. Disarming can stop the alarm

### 8.5.3 Shock alarm

When the tracker is in the armed state, a shock alarm will be triggered when the device moves or vibrates. The shock alarm will only be triggered once within 3 minutes. The alarm siren will beep for 5 seconds for the first time within three minutes. The alarm siren will beep for 10 seconds for the second time. The siren will beep for 10 seconds for another trigger of shock alarm

## 8.6 Other alarm functions

### 8.6.1 Low battery alarm

When the tracker's built-in battery voltage is close to 3.55V, tracker will send a low battery alarm every 15 minutes, a total of 2 times.

### 8.6.2 External power disconnection alarm

This function is turned on by default. When the external power supply is disconnected, the device will send an external power disconnection alarm.

### 8.6.3 SOS Alarm

Press the SOS button for 3 seconds and the device will send SOS alarm.

### 8.6.4 Geo fence

After multiple electronic fences are set up on the APP or platform, the Geo fence alarm will be triggered when the device enters or leaves the set fence.



### 8.6.5 Movement alarm

Draw a circle with the current location of the tracker as the center. Once the tracker exceeds the radius, a movement alarm will be triggered.



### 8.6.6 Over speed alarm

After setting the speed value, an overspeed alarm will be triggered when the device speed exceeds the set threshold.

### 8.6.7 Fuel alarm

When the vehicle's fuel consumption exceeds the normal standard while the vehicle is running, or there is fuel leakage or fuel stealing when the vehicle is stopped, the GPS will trigger an oil theft and oil leakage alarm, and the alarm horn will sound for 20 seconds.

## 8.7 Listen

Listen for 15 seconds per request

## 8.8 Bluetooth configuration parameters

You can click the Bluetooth icon on the App login page or the home page after login to enter the Bluetooth configuration parameter function interface, after finding the device whose Bluetooth name is "Bn303+ Last 4 bits of imei", click and enter the machine password to directly modify the device parameters after the connection is successful. All SMS commands can be set via Bluetooth.



APN settings	>
Ip/Dns Settings	>
Tcp/Udp Settings	>
Gprs/Sms mode	>
Position strategy	>
Time Zone	>
Set SMS password	>
Set authorization number	>
Delete authorization number	>
Sensitivity	>
Other instruction	>

## 8.9 Other function settings

You can control the device to stop alarming, check sim card balance, reset the device, restore factory settings, set shock sensitivity, authorization number, times of alarms, time zone, external power on/off, Bluetooth switch, Oil volume zero adjustment/full adjustment, smart angle updating settings,



tracker password, check device details, operation records, and installation information.

## 9 Bluetooth automatic arm/disarm







After installing the equipment in the vehicle, close the doors and windows, sit in the driver's seat, open the phone settings, turn on Bluetooth and search for the device named "Bn303 + last 4 digits of IMEI", click to connect, enter the machine password to pair successfully. Hold the phone in your hand and send the command "btcalibrate + password", wait for 1 minute. After the horn beeps three times, place the phone flat on the dashboard and send the command "btcalibrate + password", wait for 1 minute. When the horn beeps three times again, it indicates that the calibration is successful. When you are about 5 meters away from the terminal, the terminal will automatically arm. To disarm it again, you need to return to the vehicle. When you approach the terminal from a far distance to about 5 meters, the terminal will automatically disarm.

9.1 If the Bluetooth cannot be found, please press the SOS button continuously for more than 5 times until the speaker beeps 5 times. The Bluetooth will switch to discoverable mode. It will automatically switch back to undiscoverable mode after 5 minutes.

9.2 When other methods (remote control, SMS command, app, web version, Bluetooth setting parameters) are used for deployment, the Bluetooth sensor automatic deployment/withdrawal will be invalid, until the deployment is removed by other means, the Bluetooth sensor automatic deployment can be implemented.

9.3 If you do not use Bluetooth sensing, please cancel the pairing in the Bluetooth menu of the phone or send the command "delphone+ Password" to clear all the paired phones.

## 10 Remote controller (For G model)

Key	Function	Descriptions
	Arming	Press for 0.5 second, siren beep one time. If the vehicle is in the ignition state, it cannot enter the armed state and the horn will not sound.
	Disarming	Press for 0.5 second, siren beep 2 times. Stop all alarms.
	Silent arming	Press for 0.5 second when it is in disarm state, siren beep one time. In silent mode, the siren will not sound even if an alarm is triggered. DISARM will quit from silent mode.
	SOS	Press for 3 seconds, Tracker will send SOS alert to authorized phone numbers. Siren won't sound.
	Deterrence /Car locate	Press for 0.5 second when it is in arm state, siren will beep 10 seconds, press disarm key  to stop.

\* If you prefer to use the mobile APP and web platform to manage your device, you do not need to pay attention to the following content.

## 11 SMS functions

GPRS and SMS work at the same time by default, If you only use SMS to manage the device, it is recommended to turn off GPRS by referring to the command of 11.21 to save power and traffic.

**Attention:**

When reading this user manual, you will notice that we have used "+" and "space" between some words; "+" between two words means they should be written together as one word and "space" between two words means you should leave one character space between two words.

## **11.1 Changing Password**

Command: password+old password+space+new password, Response: password ok

The default password is 123456, which must be changed when using it for the first time.

## **11.2 Authorization**

Command: admin+password+space+mobile phone number, Response: admin ok

Cancel: noadmin+password+space+authorization number, Response: noadmin ok

Call the tracker 10 times in succession, the number will be authorize automatically as the first number and tracker response "add master ok"

Up to 5 numbers can be set and authorized, and only authorized number can receive alarm message.

## **11.3 Single Tracking**

Command: position+password, tracker reply with the location information and click the link to view the device location on the map.

Make a call to the tracker, and the tracker will automatically hang up and reply with a positioning message.

If there aren't any authorized numbers set-up, it will reply all calls with a location report; if there are authorized numbers set-up, then it will not respond when an unauthorized number calls it.

## **11.4 Positioning strategy**

### **11.4.1 Working mode**

Real time online: online+password, GSM always online, the location can be queried at any time, and whether the device is stationary or moving, the location will be reported at set intervals.

Smart mode: sleep+password, the device sleeps when it is stationary (phone calls, SMS, and alarms can trigger the device to go online. After SOS, door opening alarms, and ACC alarms are triggered, the device will be online in real time until the alarm is cleared). It wakes up when moving, whether it is stationary or moving. The device will report its position according to the set positioning intervals.

### **11.4.2 Positioning interval**

Command: fix+020s+002h+005n+password, tracker will report at 20 seconds interval when the device is moving, and 2 hour when it is stop , 005n means limited to 5 times of positioning, \*\*\*n means unlimited times.

Cancel: nofix+password, Response: nofix ok

## **11.5 Remote immobilizing**

### **Delayed immobilizing**

Command: stop+password. When the current speed of the vehicle is greater than 20km/h, the command will not be executed immediately. it will be executed only after the vehicle speed is less than 20Km/h.

### **Immobilizing immediately**

Command: quickstop+password, no matter whether the vehicle speed is greater than 20km/h, the

command will be executed immediately.

### **Resume fuel and power supplying**

Command: resume+password, restore fuel and power supply.

## **11.6 Arming/disarming**

**Arming:** arm+password, Response: Tracker is activated, the vehicle terminal enters the armed state. If the vehicle is in the ignition state (i.e. ACC is ON), it cannot enter the armed state, and then reply "set up fail! pls turn off ACC".

**Silent arming:** silent+password, Response: silent ok!, the terminal enters the silent arming state. After the alarm is triggered, the siren does not sound, but an alarm text message will be sent to the authorized number.

**Disarming:** disarm+password, response: Tracker is deactivated, After disarming, the door, shock sensor and ACC alarm will be deactivated.

## **11.7 Alarm function in arming state**

### **11.7.1 Door Opening Alarm**

When the door is opened in arming state, tracker will send SMS notification "Door alarm+latitude & longitude" to authorized numbers. The siren will beep for 20 seconds, and if the door is still open, then the siren will beep for another 20 seconds with 20 seconds pause, disarming to quit the alarm.

### **11.7.2 ACC Alarm**

When the tracker is in the armed state, turn the starter key to the ACC ON position or start the vehicle directly, it will send "ACC alarm + latitude / longitude" to authorized numbers and the siren will sound for 20 seconds. And if the ignition is still on, then the siren will beep for another 20 seconds with 20 seconds pause, disarming to quite the alarm.

### **11.7.3 Shock Alarm**

When the tracker is in the armed state, when the device moves or vibrates, it will send SMS notification "Sensor alarm + latitude and longitude" to the authorized number. The vibration alarm will only be sent once within 3 minutes. The siren will beep for 5 seconds for the first time within three minutes of the vibration alarm. The siren sounds for 5 seconds and then sounds for 10 seconds. Vibration sensitivity defaults to level 2, which can be set to 1, 2, or 3. Command: sensitivity+password+space+2

## **11.8 Other alarms**

### **11.8.1 Low battery alarm**

It is activated by default, when the battery voltage is close to 3.55V, tracker will send message "low battery + latitude & longitude" to authorized numbers for 2 times at 15 minutes interval.

Turn off: lowbattery+password+space+off, response: lowbattery off ok

Turn on: lowbattery+password+space+on, response: lowbattery on ok


### **11.8.2 External power disconnection alarm**

It is activated by default. When the external power supply is disconnected, the device will trigger power disconnection alarm.

Turn on: extpower+password+space+on, response: extpower on ok

Turn off: extpower+password+space+off, response: extpower off ok

### 11.8.3 SOS alarm

Press SOS button for 3 seconds (Press  key on the remote control), the device will trigger SOS alarm.

### 11.8.4 Movement alarm

SMS Command: move+password+space+radius, response: move ok

Cancel: nomove+password, response: nomove ok

Draw a circle with the current position of the device as the center. Once the device exceeds the radius, the device will trigger movement alarm.

### 11.8.5 Over speed alarm

SMS Command: speed+password+space+speed value, response: speed ok

Cancel: nospeed+password, response: nospeed ok

When the speed exceeds the set speed value, the device will trigger over speed alarm.

### 11.8.6 Fuel alarm

When the vehicle's fuel consumption exceeds the normal standard while the vehicle is running, or there is fuel leakage or fuel stealing when the vehicle is stopped, tracker will send "oil: ××%+latitude & longitude" to the authorized numbers. The siren will sound for 20 seconds.

For reasons such as different fuel tank heights and specifications, tracker needs to set the proper height to zero and full values in order to read the correct percentage value.

Calibrate 0%: when the fuel tank is empty, send command "oilzero+password" to the device. After receiving it, the device will automatically calibrate the zero and reponse "oilzero ok!". At this time, the oil value is 0%.

Calibrate 100%: Then fill up the oil tank, and then send command "oilfull+password" to the device. After receiving it, the device will automatically calibrate 100% and reponse "oilfull ok!" At this time, the oil value is 100%

## 11.9 Configure times of alarm

The times of SOS, power disconnection, oil, door, ACC alarm sending can be set.

Command: xtime+password+times value, response: xtime ok!

Send once by default.

## 11.10 Listen

The default mode is "Track" mode, dial the device, reply position

Command: listen+password, switch to Listen mode, dial the device, enter call

Command: tracker+password, restore to Track mode

## 11.11 ACC ON/OFF Alert

This function is OFF by default. If tracker detect "ignition on" signal from ACC wire (white wire), tracker will send "ACC on+latitude& longitude" to authorize number to tell you the vehicle has been started. When detect "ignition off" signal, it will send "ACC off+ latitude & longitude" to tell you the vehicle has been stopped.

Turn on: ACC+password, response: ACC ok

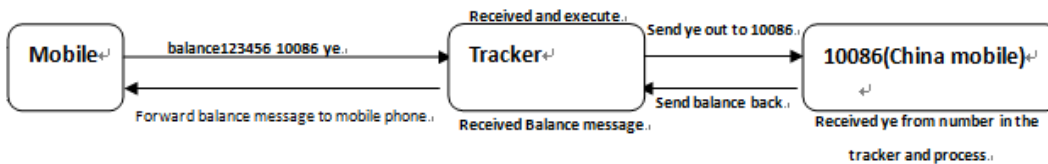
Turn off: noACC+password, response: noACC ok

## 11.12 SIM Card Balance Enquiry

### Way1

Command: balance+password+space+operator number+space+code

The device will forward the received text message from the operator to the sender of the command



### Way 2

Command: forward+password+space+operator number

When the network operator sends a text message to remind you to top up your sim card, the tracker will forward the notification message to the authorized number

## 11.13 Check Status

Command: check+password, Response: Battery, GPS signal, GSM signal, GPRS status, APN, UP, IP, Port etc.

## 11.14 IMEI Inquiry

Command: imei+password, response: the imei of your device.

## 11.15 Time zone setting

The device automatically synchronizes the local time zone. If the time is wrong, you need to set the time zone.

Command: time+space+zone password+space+time zone, reply: time ok

## 11.16 Reset Hardware

Command: reset+password, response: reset ok

## 11.17 APN Setting

Command: apn+password+space+local apn, response: apn ok

Settings are only required when using the APP and web version

## 11.18 Configure user name and password of GPRS network

Command: up+password+space+user+space+Password, response: up ok

Settings are only required when using the APP and web version

## 11.19 Configure server IP/DNS and port

Command: adminip+password+space+IP/DNS+space+port, reponse: adminip ok

No setup required to use our BAANOOL IOT server,

## 11.20 TCP / UDP switch

Command: tcp+password, response: tcp ok

Command: udp+password, response: udp ok  
No setup required to use our BAANOOL IOT server

### 11.21 SMS mode

Command: SMS+password, response: sms ok  
The device default mode is GPRS mode, if user prefers to use SMS to manage device, please use this command to close gprs mode

### 11.22 GPRS Mode

Command: gprs+password, response: gprs ok

### 11.23 Bluetooth switch

Bluetooth is enabled by default

Enable: bluetooth+ password + space +on, reply: bluetooth on ok

Disable: bluetooth+ password + space +off, reply: bluetooth off ok

### 11.24 Bluetooth transparent switch

Bluetooth transparent is disabled by default. When Bluetooth transparent is enabled, peripheral data can be transmitted to the server background through Bluetooth after the peripheral connects to the device.

Enable: bttras + password + space +on, reply: bttras on ok

Disable: bttras + password + space +off, reply: bttras off ok



### 11.25 Initialization

Command: begin+password, response: begin ok

All commands setting will return to default factory settings

## 12 Accessories

No.	Photo	Name	Specifications	Applicable model
1		Harness	12PIN	Standard
2		Microphone	1.5m	Standard
3		Relay	12V/40A or 24V/40A	Standard
4		siren	12V/24V	Optional

5		Fuel sensor		Optional
6		Remote control		For G model

## 13 Cautions

Please be sure to follow when using:

1. Keep the tracker used in a dry environment. The humid environment can easily damage internal circuits.
2. Please do not put it in a dusty environment.
3. Do not put the tracker in overheated or overcooled places.
4. Handle carefully. Don't vibrate or shake it violently.
5. Please clean with a dry cloth, do not use chemicals and detergents.
6. Please do not disassemble the device; this may lead to internal circuit failure.
7. Please read the user manual carefully before installation and operation, and understand voltage range. Otherwise, it won't work properly or damage the tracker.

## 14 Troubleshooting

Faults	Solution
Fail to turn on	Please check if the power wiring is correct?
No GSM signal	Check whether the SIM card is put in place; Whether the SIM card is a GSM network SIM card; Don't turn on the PIN code; Call forwarding cannot be opened.
No GPS signal	The device needs to be in an unobstructed position to ensure that it can receive GPS signals normally.
No response for SMS command	The password is incorrect or the format of the SMS command is incorrect.
No response for a call/No alarm notification message	The authorization number is incorrect or no authorization number is set.
Fail to stop engine	Please check whether the engine stop wiring connected correctly?
Remote control cannot be used	Turn off tracker, and turn it on to program the remote control again.