

GPS Tracker User Manual

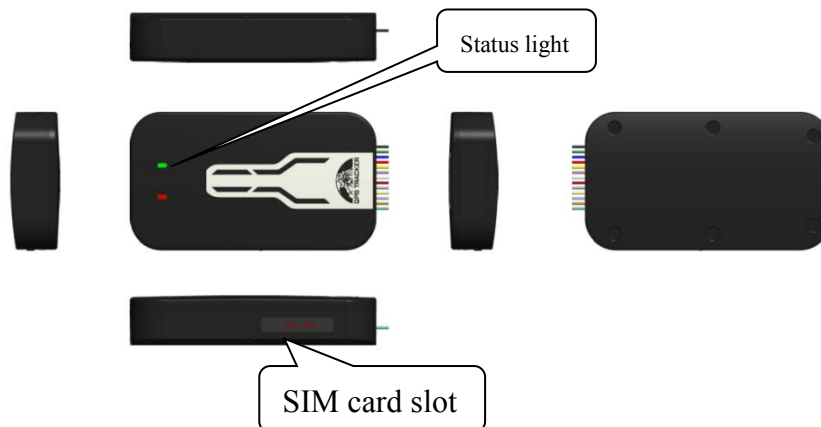


Thank you for purchasing the tracker. This manual shows how to operate the device correctly. Make sure to read this manual carefully before using this product. Please note that specification and information are subject to changes without prior notice in this manual. Any change will be integrated in the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

1 Specifications

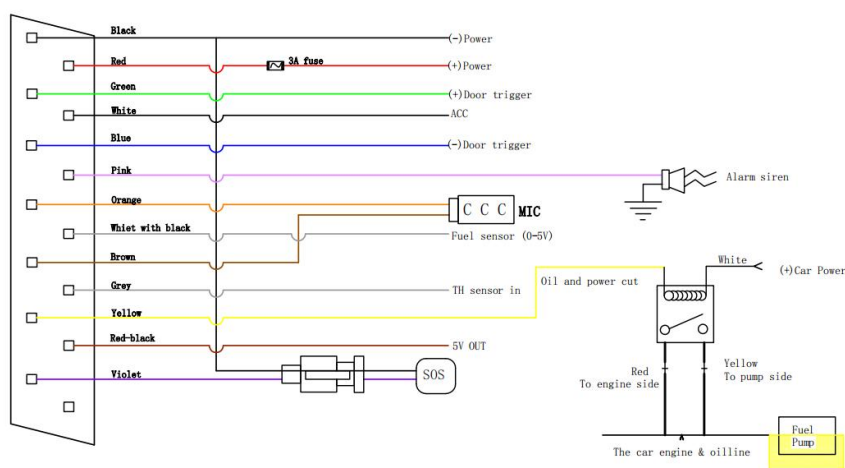
Product name	GPS TRACKER
Model	405
DIM.	9.6×5.4×1.9cm
Weight	70g
Network	GSM/GPRS/WCDMA/LTE
Band	4G (B1/B2/B3/B4/B5/B7/B8/B28A/B28B/B40) 3G (B1/B2/B3/B5/B8) 2G (850/900/1800/1900Mhz)
GPS sensitivity	-165dBm
GPS accuracy	5m
Time To First Fix	Cold status 45s Warm status 35s Hot status 1s
Applicable car power	12V-24V
Battery	Chargeable 3.7V 90mAh Li-ion battery
Storage Temp.	-40°C to +85°C
Operation Temp.	-20°C to +65°C
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 14PIN 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. The gray wire is connected to the temperature and humidity sensor, the red and black wires are connected to the temperature and humidity sensor power supply.
8. Please install the SOS button where the driver can touch it.
9. SIM card installation: Open sealed buckle of sim card, insert the sim card , then ,Put sealed buckle back. Please be sure to confirm that the SIM card network frequency band is the network frequency band supported by the tracker. Caller ID must be turned on and the PIN code must be turned off. The call forwarding function cannot be turned on.



10. 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.

4 Device Status Light

Indicators	Status	
Power LED (Red)	Flash	Low battery
	Always ON	Charging
	OFF	Fully charged
GSM LED (Green)	Always ON	No GSM signal
	Flash 1 time each second	GSM signal ok
	Flash 2 times each second	GSM signal ok、GPS signal ok

5 This tracker supports mobile APP, web server,Bluetooth and SMS to track and manage in multiple ways.

If use the mobile APP and web server, need a SIM card activated a data package or use a data sim card.

If use SMS mode, need SIM card activated functions of SMS, voice call, and call display is on

6 Mobile APP

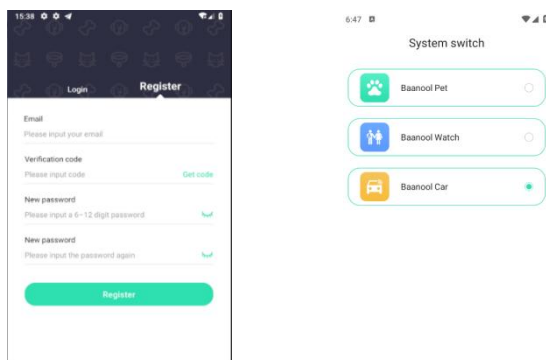
Scan the QR code to download APP



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

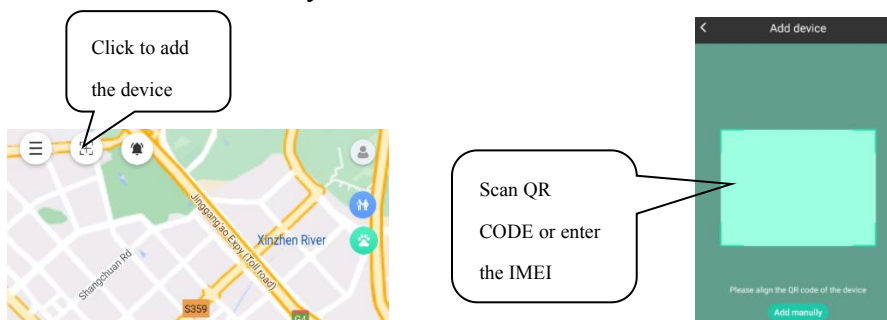
Register

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



Bind Device

click this button(show in the picture below) to add the device or scan the QR CODE on the device or enter the IMEI manually to bind the device.

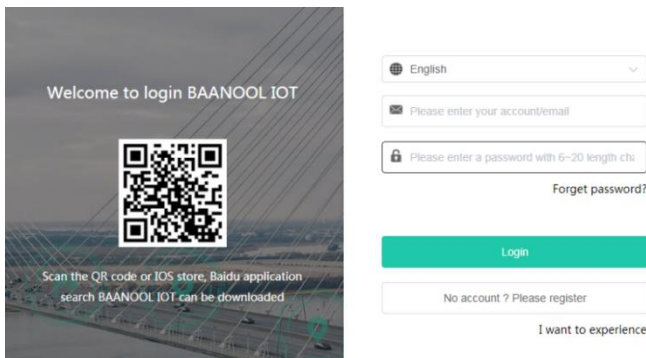


use the device

Usually, 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 11.19 and 11.20. After the device comes GPRS online normally, you can view and manage the device.

7 BAANOOL IOT's Web Server

Open www.baanooliot.com , The login account name and password is the same as mobile App's



8 Mobile APP and web server functions

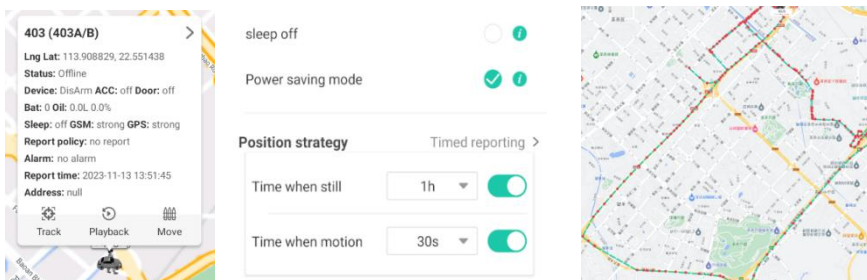
8.1 Positioning Strategy

You can click "tracking" button to select the working mode and tracking interval, when not move, set a longer time interval to report the location (eg: 1 hour), when move, you can set a short time interval for report location frequently(eg: 10 seconds).when gps device is moving will show the motion trace.

8.1.1 Work Mode

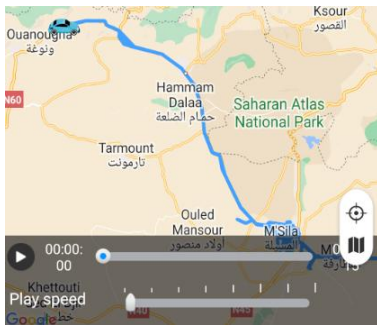
Work mode	Descriptions
Real time tracking	GPRS is always online, GPS device report location according to the set time interval. When moving or not move GPRS always online is defaulted, and report location every 10 seconds when moving or report location every hour when not move.
Smart mode	GPRS offline when not move (phone calls, SMS messages, and alarms triggered get GPRS online, SOS/door open alarm /illegal ignition alarms are triggered, the device will be always GPRS online until these alarms canceled). when moving, GPS device Wake up and go online , no matter move or not move, the device will report location at the set time interval.

8.1.2 Tracking Time Interval



8.2 Playback

you can click "playback" to check the history motion trace



8.3 Remote Immobilizing

no quick Remote immobilizing, Remote immobilizing quickly ,Remote fuel resume

8.4 Arm/Disarm

arm、 Silent Arming、 disarm

8.5 Alarm function in arming state

8.5.1 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.

8.5.2 ACC Alarm

In arming state, if the ignition of the vehicle has been switched “ON”(Key is rotated to “ACC ON” position or vehicle is started, ignition alarm is triggered, The siren will beep 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.

8.5.3 Shock Alarm

In arming state, the tracker detect the movement and shock, will send “Sensor alarm + latitude / longitude” to authorized numbers, and only send once in 3 minutes. Siren will beep for 5 seconds for the first trigger and second trigger, and then ,Siren beep 10 seconds for another trigger,

8.6 Other Alarms

8.6.1 Low Battery Alarm

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.

8.6.2 External Power Alarm

This function activate by default. Tracker will send “Power alarm+latitude& longitude” to authorized numbers when external power disconnected.

8.6.3 SOS Alarm

Press SOS button for 3 seconds(For model B/D, press  key on the remote control), tracker will send SMS notification "Help me+latitude& longitude" to all the authorized numbers.

8.6.4 Geo-fence

After Several Geo-fences are set on APP or web server, Geo-fence alarm will be triggered When the

tracker move out or move in these Geo-fences.



8.6.5 Movement Alarm

on platform ,you can draw a circle regarding the device current position as the center. When the device leaves the current position and exceeds the circle range, Movement alarm will be triggered.



8.6.6 Over speed Alarm

After set up the speed value (km/h), over speed alarm will be triggered. when the device runs over the speed set before

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, tracker will send "oil: ××%+latitude & longitude" to the authorized numbers. The siren will beep for 20 seconds.

8.6.8 Temperature Alarm (Option)

When the device operating temperature exceeds the set temperature range, the device will trigger temperature alarm. The available temperature range is from -40℃ to 80℃.

8.7 WiFi hotspot (For C/D model)

This function is deactivated by default. When the hotspot is turned on, user's other devices can use the wifi name and password to connect to the Internet.

If a camera is installed, the hotspot should be turned on to use the photography and video functions.

8.8 WiFi camera (Optional for C/D model)

8.8.1 Configure the network for the camera

Open the app, After turn on the wifi hotspot in the APP menu, the hotspot name will come out, Click the hotspot name will display the QR code for Network configuration.

Point the camera at the QR code to scan the code,The camera prompts “Network configuration successful”.

8.8.2 Photography function

When the vehicle detects DOOR/ACC/SOS alarm, the device will report alarms and automatically turn on the camera, then, upload the captured photos to the monitoring platform and send the link of photos to all authorized numbers.

8.8.3 View real-time video

Both the monitoring platform and APP can open a live video stream to view the surrounding environment of the vehicle. When the video is playing, you can click the camera button to capture video frames.

Audio is off by default, you can click the mute button to turn on real-time audio.

8.8.4 Video playback

You can view the video playback on the App, and the playback is muted by default.

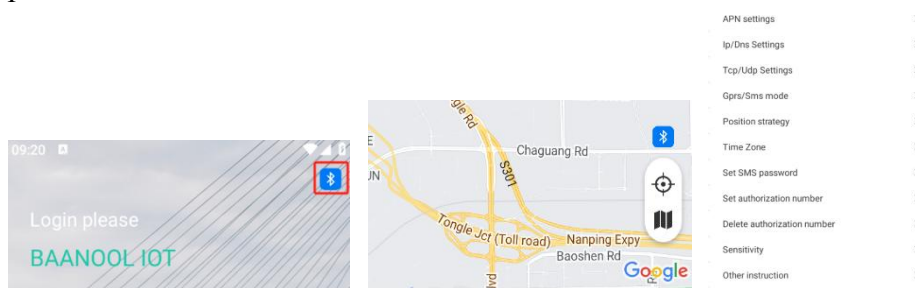
Click the mute button to turn on the sound.

8.9 Listen

You can listen for 15 second each time set this function.

8.10 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, and click "Bn405" to directly modify device parameters after the connection is successful. All SMS commands can be set via Bluetooth.



8.11 Other functions

You can control functions of deactivate alarm, SIM Card Balance enquiry, firmware update, restart, initialization Settings. and set shock sensitivity, authorization, times of alarm, time zone, external power on /off, Fuel sensor calibrating, vibration sensitivity, angle, SMS password, and check device details, Operation record, installation.

9 Bluetooth automatic arm/disarm

Open the phone Settings, find the Bluetooth menu, open Bluetooth, search for Bluetooth named "Bn405", click Connect, enter the machine password, and then the pairing succeeds.

When you are far away from the terminal and the Bluetooth connection is disconnected, the terminal automatically arm.

When close to the terminal, Bluetooth automatically connected, the terminal automatically disarm.

Note: When using other methods (remote control, SMS command, app, web version, Bluetooth setting parameters) after deployment, Bluetooth sensor automatic deployment/withdrawal will be invalid, until through other means of withdrawal, Bluetooth sensor automatic deployment. If you do not use Bluetooth sensing, please unpair in the Bluetooth menu of your phone.

10 Remote controller (Optional)

Key	Function	Descriptions
	Arming	Press for 0.5 second, siren beep one time .If the vehicle is in the

		ignition state(Represents the key not pulled),it cannot enter the armed state ,siren not beep
	Disarming	Press for 0.5 second, siren beep 2 times, all alarms are stopped
	Silent arming	Press for 0.5 second in disarm state, siren beep one time. In silent mode, the siren will not sound even if alarm is triggered. DISARM will quit from silent mode.
	SOS	Press for 3 seconds, Tracker will send SOS alarm to authorized phone numbers. Siren won't beep.
	Deterrence/Car locate	Press for 0.5 second in arm state, siren will keep beep for 10 seconds, press disarm key  to quit

*If prefer to use APP and web server for set gps device , You can ignore the following instructions

11 SMS Functions

The device defaults to working in GPRS mode and SMS mode at the same time.

If you only use SMS mode to manage the device, it is recommended to turn off GPRS by referring to the command on 11.23 to save power and GPRS data .

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

SMS command: password+oldpassword+space+new password, Tracker response: password OK .
The default password is 123456, please change password in the first time use it.

11.2 Authorization

Setup SMS command: admin+password+space+mobile phone number ,

Tracker response: admin ok

Cancel SMS command: noadmin+password+space+authorized number

Tracker response: noadmin ok

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

Up to 5 numbers can be authorized. Alarm information can only be received if authorized cell phone No. is set

11.3 Single Positioning

SMS Command: position+password , it will reply a SMS with a location report, Click the link to check the tracker's location on the map,

Make a call to the tracker and it will automatically hang up and reply a SMS with positioning.

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 tracking: online+password, gsm signal 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 tracker sleeps when it is stationary (phone calls, SMS, and alarms can trigger the tracker to go online. After SOS, door opening alarms, and illegal ignition alarms are triggered, the device will be online in real time until the alarm is lifted). It wakes up when it is in motion. Whether it is stationary or moving, the device will follow the set track interval time as accord to the location.

11.4.2 Setting Positioning Time Interval

SMS Command: fix+020s+002h+005n+password, tracker will report at 20 seconds interval when the device is moving and update a position at 2 hours interval when motionless, and only 5 times are updated, 005n means 5 times, ***n means unlimited times.

Cancel the setting: nofix+password, Tracker 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.

Remote fuel resume

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(Represents ths key not pulled),it cannot enter the armed state, and then reply “set up fail! pls turn off ACC”.

Silent Arming: silent+password, Respond: 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, Tracker response: Tracker is deactivated, the vehicle terminal will be deactivated, and these alarms won't be triggered any more.

11.7 Alarm function in arming state

11.7.1 Door Opening Alarm

When the door is opened in arming state, the vehicle terminal 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

Tracker will send “ACC alarm + latitude / longitude” to authorized numbers if the ignition of the vehicle has been switched “ON” (Key is rotated to “ACC ON” position) or start the vehicle directly when tracker works in arming state. The siren will beep 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

The vehicle moves and shock when it in arming state and tracker will send “Sensor alarm + latitude / longitude” to authorized numbers, and only send once in 3 minutes. Siren will beep for 5 seconds for the first trigger and second trigger, and then beep 10 seconds for another trigger , disarming to quit the alarm

There are three different levels for Vibration alarm, the defaults is level 2, SMS command: sensitivity+password+space+2

11.8 Alarms

11.8.1 Low battery alarm

This feature is activated by default, when the battery voltage is close to 3.55V, tracker will send message “low battery + latitude & longitude” for 2 times at 15 minutes interval.

SMS command to deactivate: lowbattery+password+space+off

Tracker response: lowbattery off ok

Example: lowbattery123456 off

SMS command to activate: lowbattery+password+space+on

Tracker response: lowbattery on ok

Example: lowbattery123456 on

11.8.2 External power disconnection alarm

This feature activate by default. Tracker will send “Power alarm+latitude& longitude” when external power disconnected.

SMS command to deactivate: extpower +password+space+off

Tracker response: extpower off ok

Example: expower123456 off

SMS command to activate: extpower +password+space+on

Tracker response: extpower on ok

Example: expower123456 on

11.8.3 SOS alarm

Press SOS button for 3 seconds(For model B/D, press  key on the remote control), the tracker will trigger SOS alarm

11.8.4 Movement alarm

SMS command: move+password+space+ radius , Tracker response: move ok

Cancel the setting: nomove+password , Tracker response: nomove ok

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

11.8.5 Over speed alarm

SMS command: speed+password+space+ speed threshold , Tracker response: speed ok

Cancel : nospeed+password, Tracker response: nospeed ok

When the speed exceeds the set speed threshold, an overspeed alarm will be triggered

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 beep for 20 seconds.

SMS command to stop the notification: nooil+password

For reasons such as different fuel tank heights and specifications of fuel sensor, 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:

SMS command: oilzero+password

Tracker response: oilzero ok!

Example: oilzero123456

Calibrate 100% after fill the fuel tank 100%:

SMS command: oilfull+password

Tracker response: oilfull ok!

Example: oilfull123456

11.9 Configure times of alarm

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

SMS command: xtime+password+times value

Response: xtime ok

Send once by default.

11.10 Temperature alarm(Optional)

The available temperature range is from -40°C to 80°C.

Send SMS command "temperature+password+space+the lowest temperature(the number should be 2 digits), the highest temperature (the number should be 2 digits)"to the tracker, it will reply "temperature ok". When the temperature is beyond the limited range, the tracker will send SMS alarm to the authorized numbers.

Deactivate temperature alerts : notemperature+password , Tracker response: notemperature OK

11.11 WiFi hotspot (For C/D model)

This function is deactivated by default. When the hotspot is turned on, user's other devices can use the wifi name and password to connect to the Internet.

activate: hotspot+password+space+on, Tracker Response: wifi name and password

deactivate: hotspot+password+space+off, Tracker Response: hotspot off ok

Check WiFi hotspots: checkhotspot+password, Tracker Response: wifi name and password

Modify WiFi hotspot password:

SMS command: hotspotpwd+password+space+hotspot new password,Tracker Response: hotspotpwd ok

11.12 Listen

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

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

SMS command: tracker+password, restore to Track mode

11.13 ACC ON/OFF Alert

This function is OFF by default.

SMS command to activate: ACC+password, Tracker Response: ACC ok

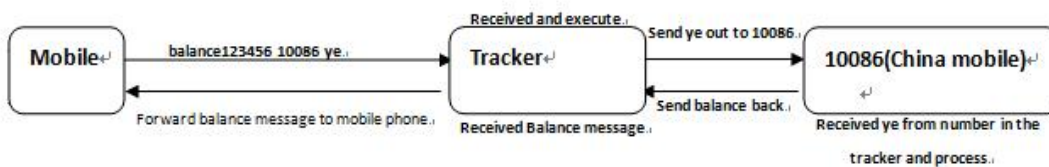
SMS command to deactivate: noACC+password, Tracker response: noACC ok

11.14 SIM Card Balance Enquiry

First way:

SMS command: balance+password+space+phone number of operator +space+code

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



Second way:

SMS command: forward+password+space+phone number of operator

When the network operator sends a text message requiring recharge, the tracker will forward it to the authorized number

11.15 Check Status

SMS command: check+password,

Response: Power, Battery %, GPS signal, GSM signal, GPRS, APN, UP, IP, Port, Temperature, Humidity etc

11.16 Check IMEI

SMS command: imei+password

Tracker response: xxxxxxxxxxxxxxxxx (A 15 digits IMEI of your device)

Example: imei123456

11.17 Time zone setting

Tracker works in the local time zone by default. If you find that the time zone is incorrect, you can configure the time zone

SMS command: time+space+zone+password+space+time zone value

Tracker responds: time ok

Example: time zone123456 8

11.18 Reset Hardware

SMS Command: reset+password

Tracker Response: reset ok

Example: reset123456

11.19 APN Setting

SMS command: APN+password+space+local APN ,Tracker response: APN OK

Settings are only required to use the APP and web version platform.

11.20 Configure user name and password of GPRS

SMS command: up+password+space+user+space+password

Tracker response: up ok

Settings are only required to use the APP and web version platform

11.21 Configure Server IP/DNS

SMS command: adminip+password+space+IP/DNS domain name+space+port,Tracker response: dns success!

No setup required to use baanooliot.com

11.22 TCP / UDP switch

SMS command: tcp+password, Tracker response: tcp ok

SMS command: udp+password, Tracker response: udp ok

No setup required to use baanooliot.com

11.23 SMS Mode

SMS command: SMS+password, Tracker response: sms ok

The tracker turns on GPRS by default. If you prefer SMS and phone calls to manage the tracker, it is recommended to use this command to turn off GPRS.

11.24 GPRS Mode

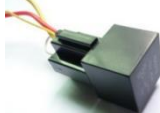
SMS command: gprs+password, Tracker response: gprs ok

11.25 Initialization

SMS command: begin+password , Tracker response: begin ok

The tracker returns to default factory settings.

12 Package contents

No.	Photo	Name	Specifications	Applicable model
1		Harness	14PIN	Standard
2		Microphone	Length with 1.5 meters	Standard
3		Relay	12V/40A or 24V/40A	Standard

4		Siren	12V/24V	Optional
5		Fuel Sensor		Optional
6		Remote control		Optional for B/D model
7		Temperature and Humidity sensor		Optional
8		Wifi Camera		Optional for C/D 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 paint 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	1. Please check if the power wiring is correct?
No GSM signal	1. Check whether the SIM card is put in place. 2. Whether the SIM card is a GSM network SIM card. 3. Don't turn on the PIN code. 4. 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	1. No credit on SIM card. 2. The password is incorrect or the format of the SMS command is incorrect.

No response for a call/No alarm notification message	1. Did you have set up the authorized phone number? 2. If authorized number exists, did you make the call from an authorized phone number? 3. The format of the phone number is incorrect.
Fail to stop engine	1. 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.