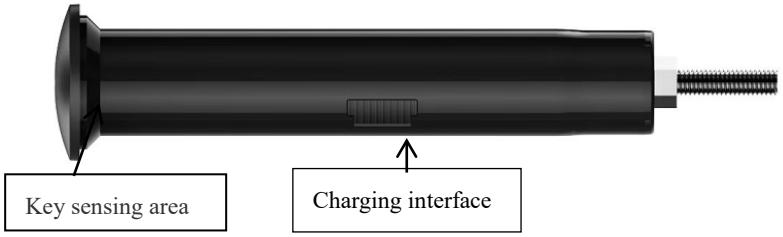
GPS TrackerUser Manual

Thank you very much for purchasing our GPS tracker. 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	407
DIM.	Ø35×160mm
Weight	50g
Network	LTE
Band (4G)	Latin America（B2/B3/B4/B5/B7/B8/B28A/B28B） North America（B2/B4/B5/B7） Europe, Asia and Africa（B1/B3/B5/B7/B8/B20/B28A/B40）
GPS sensitivity	-165dBm
GPS accuracy	5m
Time To First Fix	Cold status 45s Warm status 35s Hot status 1s
Battery	Chargeable 3.7V 700mAh Li-ion battery
Storage Temp	-40°C to +85°C
Operation Temp	-20°C to +45°C
Humidity	5%--95% non-condensing

2. HARDWARE DESCRIPTION

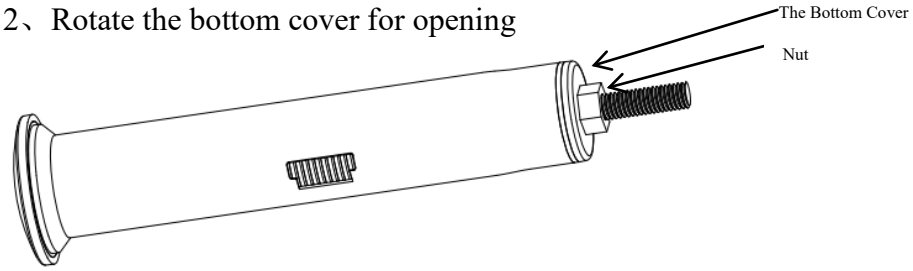


The red indicator light comes on during charging and goes off after charging is completed.

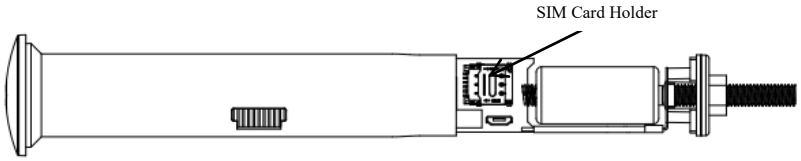
3. INSTALLATION

1、Turn the nut counterclockwise

2、Rotate the bottom cover for opening



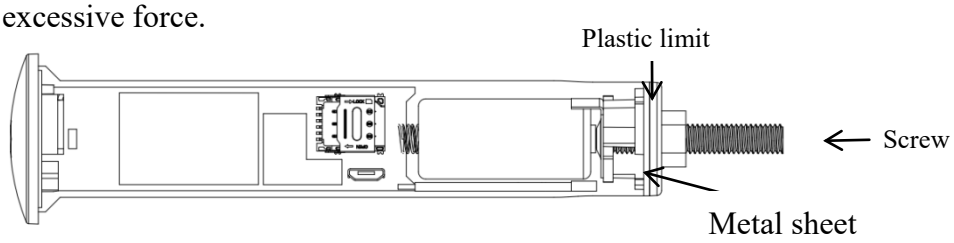
3、Hold the bottom cover and cable. Gently pull outward until the SIM card holder is exposed, and then insert a SIM card.



4、Push the PCBA(Note: The USB interface on the PCBA must be aligned with the direction of the shell USB interface) along the guide groove in the case, install the battery (pay attention to the positive and negative poles, the spring side is the negative pole) and push it together with the back cover.

Rotate the bottom cover so that the metal sheet rotates to the limit slot， pull the screw outward slightly， manually tighten the nut clockwise when it stops pulling.

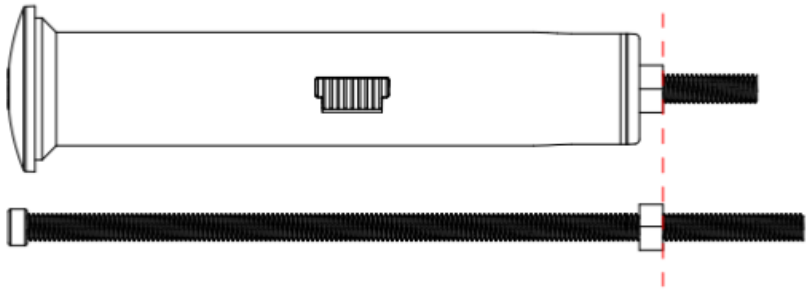
Note: This nut cannot be tightened with the help of tools, otherwise the plastic shell will break due to excessive force.



5、The tracker automatically turns on after the installation is completed. After 1 minute, the indicator light flashes once every second, which means the lte signal is normal, and the indicator light flashes twice a second, which means the lte signal and GPS signal are normal. The indicator light will automatically turn off after 3 minutes when turn on each time, each time the sensor key is successfully operated, the signal indicating light will be on for 3 minutes.

6、Please first check the diameter and length of your bicycle’s head tube to make sure the tracker can fit in well. Diameter of tracker is 24mm, and length is 162mm.

7、Position the nut of the M6 matching screw, to match the length of nut and tracker device.



8、Rotating the M6 matching screw into the bicycle’s handlebar tube and fix it. Then wedging M6 screw fully into the handlebar tube with a hammer.

9、Take out the M6 matching screw and install the tracker into the bicycle tube.

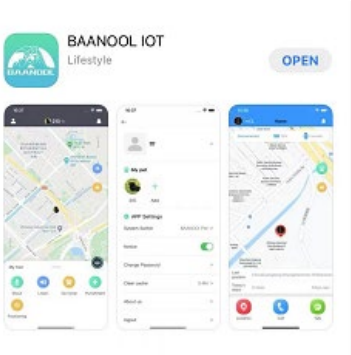
4. THIS GPS TRACKER SUPPORTS MOBILE APP, WEB SERVER PLATFORM,BLUETOOTH AND SMS FOR MANAGEMENT IN MULTIPLE WAY

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.

5. MOBILE APP

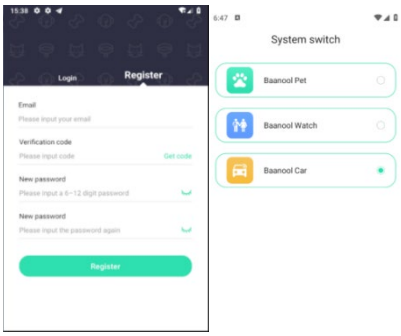
Scan the QR code to download APP



Google Play、App Storesearch “BAANOOL IOT” to download it

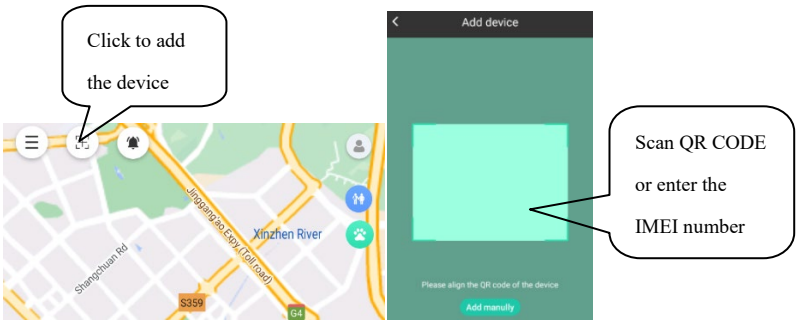
Register

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.

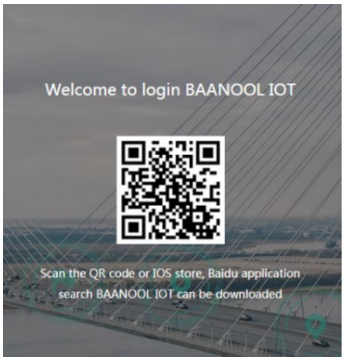


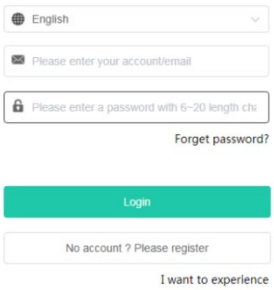
Using tracker

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 to10.15 and 10.16. After the device comes online , you can view and manage the device.

6. BAANOOL IOT’S WEB VERSION

Open www.baanooliot.com , The login account name and password are the same as phone app’s





7. MOBILE APP AND BAANOOL IOT'S WEB

7.1 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 2 hours), and when it moving, you can set a short period of time to report location information frequently (such as 3 minute). When the tracker moves, the movement trajectory will be displayed.

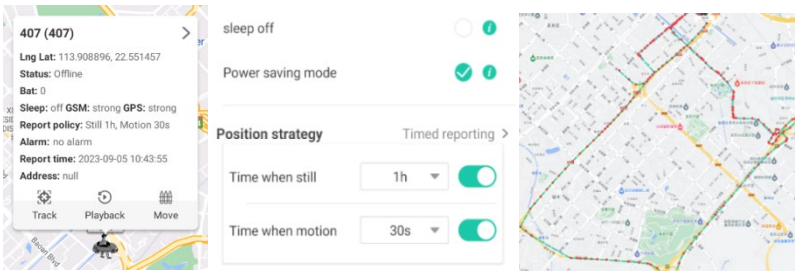
7.1.1 Working mode

Working Mode	Description	Standby Time
Real time online	The tracker is online in real time and reports its location according to the set motion/stationary intervals.	● Real-time online, positioning once in 3 minutes when moving, positioning once in 24 hours when stationary, standby for about 6 days
Smart mode	Offline when stationary (the tracker turns off LTE. inductive key、shock alarms can trigger online). Wake up and go online when in motion. Whether it is stationary or moving, the device will report at the set interval. The device defaults to this mode, but not default tracking strategy	● Positioning once in 3 minutes when moving, once in 24 hours when stationary, about 26 days in standby. This setting is the default ● When moving, it is online but does not set the positioning interval (Single location if needed); Offline when stationary, positioning once every 24 hours, standby for about 56 days.
Power saving mode	After the start time and reporting interval are set, the device goes offline. (the tracker turns off LTE. Induction key can trigger online; Or the movement can be online in the armed state, and alarm once every three minutes, forming a track until	● Report once a day for about 170 days of standby

	disarming), after reaching the start time, the device reports the position and works for 3 minutes, and then periodically goes online to report the position according to the set interval from the start time.	

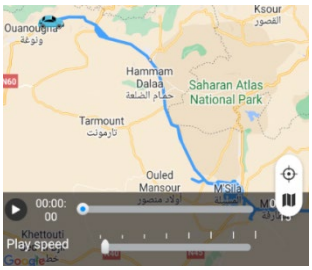
* The above standby time is measured based on 2 hours of cycling per day and is for reference only. In actual use, there may be differences due to the signal strength, positioning interval and riding time.

7.1.2 Positioning interval



7.2 History playback

You can click the playback button to view the historical track



7.3 Geo-fence

After multiple geo 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.

7.4 Movement alarm

Draw a circle centered on the current location of the device. When the device leaves the current position and exceeds the range, the movement alarm will be triggered.

7.5 Over speed alarm

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

7.6 Shock alarm

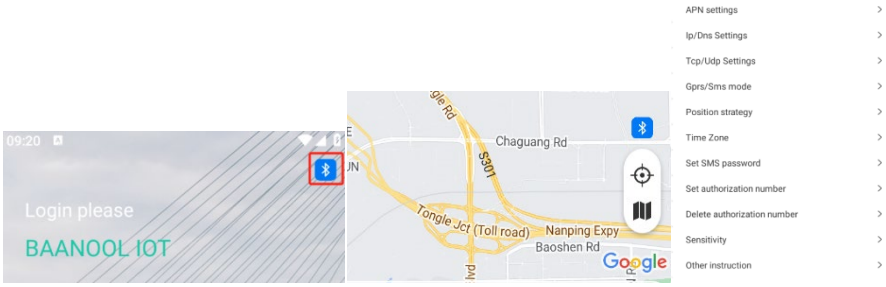
When the tracker is in the armed state, a shock alarm will be triggered when the vehicle moves, tilts or vibrates.
Vibration sensitivity can be set to three levels: low, medium and high.

7.7 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.

7.8 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, and click "Bn407" to directly modify device parameters after the connection is successful.All SMS commands can be set via Bluetooth.



7.9 Other function settings

You can control the device toarm and disarm, stop alarming, check sim card balance, update firmware, reset the device, restore factory settings, set shock sensitivity, authorization number, time zone, Vibration sensitivity, tracker password, check device details, operation records, and installation information.

8. INDUCTIVE KEY ARM/DISARM

Each time the device detects the inductive key, the buzzer will prompt once and wake the device to work for 3 minutes.
Arm： Put the inductive key on the top of the device. After 2 seconds, the buzzer will sound once, indicating that the device is armed, remove the sensor key.

Disarm：Quickly place the inductive key on the top of the device twice in a row, and then leave. the buzzer will sound twice, indicating that the device is disarmed. If the wrong number of times is swiped five times in a row, the device will alarm and disable the inductive key. You need to disarm in other waysto continue using the inductive key.
The number of key swipes needed to disarm and the number of error bans can be set. Command: inductionkey+password+space+2. Reply: inductionkey ok, where 2 means the key needs to be swiped 2 times to disarm.

9. BLUETOOTH AUTOMATIC ARM/DISARM

Open the phone Settings, find the Bluetooth menu, open Bluetooth, search for Bluetooth named "Bn407", 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 (inductive key, SMS command, app, web version, Bluetooth setting parameters) after arm, Bluetooth sensor automatic arm/disarm will be invalid, until through other means of disarm, Bluetooth sensor automatic arm. If you do not use Bluetooth sensing, please unpair in the Bluetooth menu of your phone.

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

10. SMS FUNCTIONS

The device turns on lte by default. If you use only SMS to manage the device, it is recommended to turn off lte by referring to the 10.19 command.
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.

10.1 Changing password

SMS 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.

10.2 Authorization

Set up: 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.

10.3 Single Tracking

SMS 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.

10.4 Positioning strategy

11.4.1 Working mode

Real time online：online+password, LTE 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, sleep when the tracker is stationary (The tracker cannot be contacted by call or SMS. inductive key、shock alarms can be triggered), the tracker will be awakened when it moves, and whether it is stationary or moving, the device will report its position according to the set multiple positioning intervals.
Power saving mode: psm+password+space+wake-up time (hour: minute)+space+reporting interval (hour)，After the start time and reporting interval are set, the device goes offline. (the tracker turns off LTE. Induction key can trigger online; Or the movement can be online in the armed state, and alarm once every three minutes, forming a track until disarming), after reaching the start time, the device reports the position and works for 3 minutes, and then periodically goes online to report the position according to the set interval from the start time.For example, psm+password+space+9:30+space+24 means that the device wakes up at 9:30 to report and then wakes up and reports every 24 hours.

11.4.2 Positioning interval

SMS Command：fix+003m+024h+***n+password，tracker will report at 3minute interval when the device is moving, and 24 hour when it is stop , ***n means unlimited times, The motion of the device can form a trajectory; In order to save power, the motion interval can also be set to "000s", and the motion is not reported (the vibration alarm will be reported every 3 minutes in arm state can also form a trajectory), and the static time is reported once every 24 hours.
Cancel：nofix+password，response：nofix ok

10.5 Arm/Disarm

Arm：arm+password，Response： Tracker isactivated.
Disarming：disarm+password，Response： Tracker is deactivated，The device will stop all alarm

10.6 Shock alarm

When the device is in the armed state, the shock alarm will be triggered when the device moves or vibrates.
Vibration sensitivity defaults to level 2, which can be set to 1, 2, or 3.
SMS command: sensitivity+password+space+2

10.7 Movement alarm

SMS command：move+password+space+radius, response: move ok
Cancel: nomove+password, response: nomove ok
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.

10.8 Over speed alarm

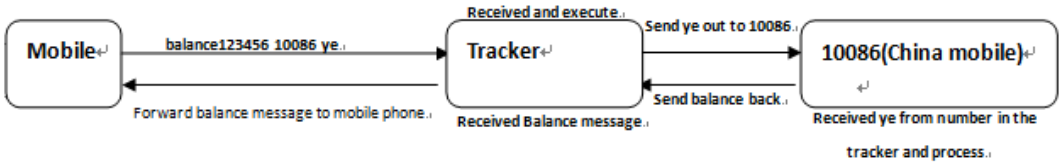
SMS command：speed+password+space+speed value, reply: speed ok
Cancel: nospeed+password, response: nospeed ok
When the speed exceeds the set speed value, overspeed alarm will be triggered.

10.9 Low battery alarm

This feature is activated by default, 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.
Turn off: lowbattery+password+space+off, response: lowbattery off ok
Turn on: lowbattery+password+space+on, response: lowbattery on ok

10.10 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



Way2
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

10.11 Check status

Command: check+password, reply: battery level, GPS signal, LTE signal, LTE status, APN, UP, IP, port, etc.

10.12 Check IMEI

Command: imei+password, reply: device IMEI

10.13 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

10.14 Hardware Reset

Command: reset+password, response: reset ok

10.15 APN Setting

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

Settings are only required when using the APP and web version

10.16 Configure User Name and Password of LTE Network

Command: up+password+space+user+space+Password, response: up ok
Settings are only required when using the APP and web version

10.17 Set Server IP/Domain Name and Port

Command: adminip+password+space+IP/DNS+space+port, reply: adminip ok
No setup required to use our BAANOOL IOT server, the default is BAANOOL domain name and port

10.18 TCP/UDP Switch

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

10.19 SMS Mode

Command: SMS+password
Device Reply: sms ok
The device default mode is LTE mode, if user prefer to sms managing gps device, please use this command to close LTE mode

10.20 LTE Mode

Command: LTE+password
Device response: LTE ok

10.21 Initialization

Command: begin+password
Device response: begin ok
All commands setting will return to default factory settings

11. 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 dissemble 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.

12. TROUBLESHOOTING

Faults	Solution
Fail to turn on	1. Please check if the power wiring is correct? 2. Please check if the power voltage is correct?
No LTE signal	1. Check whether the SIM card is put in place. 2. Whether the SIM card is a LTE 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 aut horized phone number? 3. The format of the phone number is incorrect.

13. PACKAGE CONTENTS

No.	Picture	name	specifications
1		charging cable	
2		Cylindrical Li-ion battery	16340/700MA
3		Inductive key	
4		Matching screw	M6
5		soft rubber power plug	

Note: Products and accessories are subject to the actual product

FCC Statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

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 Exposure statement:

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