# G12

GPS VEHICLE TRACKER

# Product Specifications

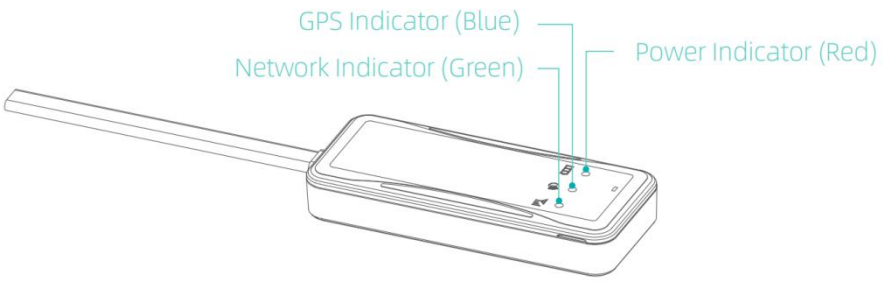
Ver:1.0

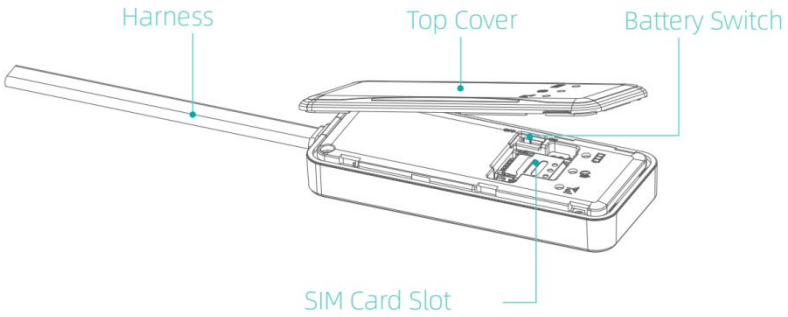
# 1、Introduction

## 1.1 Summary

The G12 is a simple micro LTE vehicle GPS tracker. It supports a wide voltage input range of 9-90V and can be widely used for tracking the location of vehicles like cars, trucks, motorcycles and electric vehicles. It has a built-in optimized 25*25mm satellite antenna with great satellite searching capability and strong signal reception for precise positioning. It supports TTL serial port communication to connect with various types of external devices.

The compact G12 device features a discreet black exterior for covert installation. Applicable for automotive finance risk mitigation, logistics fleet oversight and electric vehicle administration among other use cases. Supported capabilities include real-time tracking, trip playback, automated armed/disarmed modes, remote fuel/battery controls and driver behavior analytics.




## 1.2 Applications

Insurance industry, corporate fleets, automotive manufacturers/4S stores, individual users, electric vehicle anti-theft systems, public transport, taxis, rental vehicles, etc

## 1.3 Packing List

| | |
|---|---|
| Device | *1 |
| Power cable | *1（800mm） |
| Relay | Optional |
| Velcro | *1 |

# 2、Hardware Specifications

| # | Functions | | Description | |
|---|---|---|---|---|
| Electricity Character | Work Voltage | | DC 9V - 90V | |
| | Operating current | | 12V/ average 25mA | |
| | Sleep current | | 12V/ average 5mA | |
| | Internal Battery | | 55mAh (3.7V Polymer battery ) Optional | |
| Environment Character | Work Temp | | -20℃ - 70℃ | |
| | Storage Temp | | -30℃ - 80℃ | |
| | Work Humidity | | 10%-85% RH non-condensing | |
| | Frequency Bands | SA | LTE/4G | LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66 |
| | | | GSM/2G | 850/900/1800/1900MHz |
| | | EU | LTE/4G | LTE-FDD:B1/B3/B5/B7/B8/B20 |
| | | | GSM/2G | GSM:900/1800MHz |
| | | CN | LTE/4G | LTE-FDD:B1/B3/B5//B8<br>LTE-FDD:B34/B38/B39/B40/B41 |
| | SIM card | | Micro SIM 卡 | |
| | Antenna | | Built-in antenna | |
| | Antenna spec | | fpc antenna | |
| GPS/BD Location Character | Chip Model | | AT6558R | |
| | Location mode | | BDS+GPS | |
| | Cold Start | | 32S(open sky) | |
| | Hot Start | | 1S(open sky) | |
| | Sensitivity (tracking) | | -162 dBm | |
| | Locate the antenna | | Built-in ceramic dielectric antenna | |
| | Antenna spec | | 25mm * 25mm * 2mm | |
| | GPS frequency bands | | L1: 1575.42±1.023MHz | |
| | BDS frequency bands | | B1: 1561.098±2.046MHz | |
| | Satellite channel | | 66 | |
| | Location accuracy | | <10m | |
| | Timing accuracy | | <30ns | |
| | Speed measurement accuracy | | <0.1m/s | |
| External port | ACC detection input | | ACC detection 1 channel | |
| | Cut off oil and electricity | | Low output one (relay control line) | |
| | SOS (optional). | | Low detection all the way (SOS alarm line) | |
| | TTL/RS485 (optional) | | 1 channel | |

| | | | |
|---|---|---|---|
| Shape | Device Dimension | | 79mm * 33mm * 16mm |
| | Housing Material | | ABS+PC plastic |
| | Unit weight | | 30g |

## 3、Key Features

| Functions | Description |
|---|---|
| Real time tracking | Positioning accuracy <10m in open outdoor environments |
| Power cut off alarm | The device will trigger a power cut off alarm when the external power is disconnected or the connecting cable is cut |
| Fall detection alarm | After the device is installed and the device posture is identified, the device will report a fall detection alarm when the device posture changes. |
| Tamper alarm | Report a tamper alarm when the device is removed |
| Driver behavior analysis | **Harsh Acceleration:** When the driver suddenly presses the accelerator pedal, causing the vehicle's speed to increase rapidly, the device reports a harsh acceleration event to the platform.<br>**Harsh Deceleration:** When the vehicle's speed decreases rapidly due to emergency braking, the device reports a harsh deceleration event to the platform.<br>**Harsh Turning:** When the vehicle makes a harsh turning during normal driving, the device reports a sharp turn event to the platform.<br>**Collision:** When the vehicle collides with another object or vehicle during normal driving, the device reports a collision event to the platform. |
| Low external battery alarm | When the device detects that the external power voltage is lower than the set threshold, the device will trigger an low external power battery alarm. |
| Low internal battery alarm | When the device detects that the internal battery voltage is lower than the set threshold, the device will trigger an low internal battery battery alarm. |
| Overspeed alarm | The vehicle speed threshold can be set through the platform or SMS. When the vehicle's speed exceeds the threshold within the set time, an overspeed alarm will be reported. |
| Vibration alarm | When the vehicle ignition is off and in a stationary state, the device |

| | |
|---|---|
| | detects vehicle vibration and a vibration alarm will be reported. |

# 4、Installation

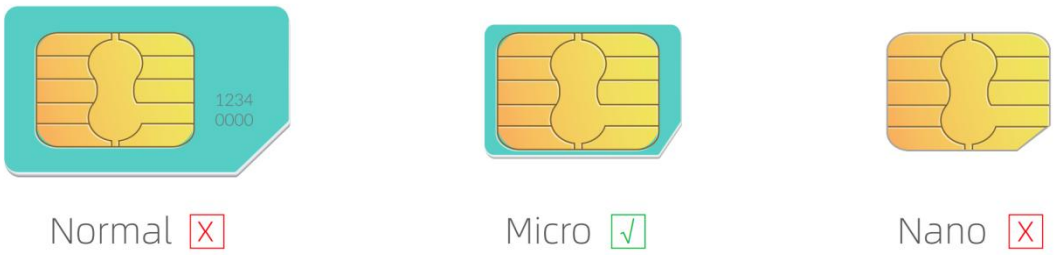
## 4.1 Main device

Check if the appearance is in good condition and verify all relevant accessories are present.

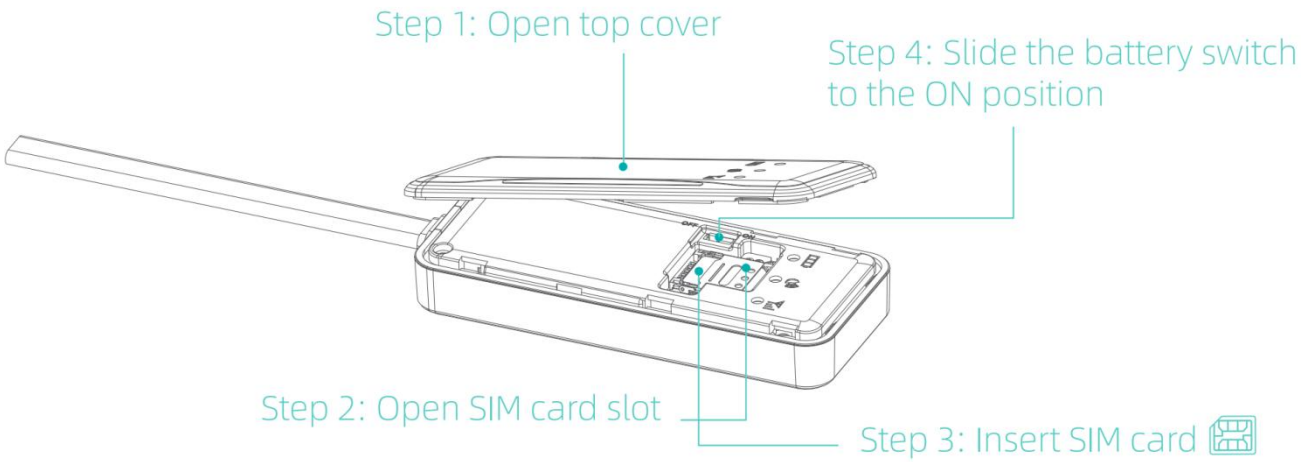
## 4.2 Insert SIM Card

### 4.2.1 Choose appropriate SIM Card

Please choose a 4G LTE-FDD supported nano SIM card like below:




**4.2.2** Power off device before installing or removing SIM card. Orient and insert SIM as depicted.




**Note:**

Please insert the SIM card with the correct orientation, ensure the SIM card has an active data plan to enable network connectivity and maintain sufficient credit on the SIM card for optimal device functionality. Before inserting or removing the SIM card, please power off the device and set the backup battery switch to the OFF position to prevent accidental activation or damage.

## 4.2 LED Indicators

**Red Light (Power):**

| Status | meaning |
|---|---|
| Fast blink (0.3S on, 0.3S off) | Low internal battery or failure |

| | |
|---|---|
| Slow blink (0.3S on, 2S off) | External power supply disconnected |
| Solid on | Normal working |
| Solid Off | Low external battery or internal failure |

**Green Light (GSM):**

| Status | meaning |
|---|---|
| Fast blink (0.3S on, 0.3S off) | Network initiating |
| Slow blink (0.3S on, 2S off) | Network signal is normal |
| Solid on | Connected to platform |
| Solid Off | No network signal or no SIM card |

**Blue Light (GPS):**

| Status | meaning |
|---|---|
| Fast blink (0.3S on, 0.3S off) | Searching satellites |
| Solid on | Position fixed |
| Solid Off | In sleep mode or not working |

**Note:**

When the device is in a static sleep mode, the LED indicators will turn off automatically. When the device is in motion, the indicator lights will all turn on automatically.

### 4.3 Wire Diagram

**Harness A: 4PIN**

| # | Function | Instruction |
|---|---|---|
| PIN1 | Power positive | Connect power supply positive (9-90V) (Red) |
| PIN2 | Power negative | Connect power supply negative (Black) |
| PIN3 | Detect ACC | Connect ACC wire (Organge) |
| PIN4 | Digital output | Connect and control relay (Yellow) |

**Harness B: 3PIN (Optional)**

| # | Function | Instruction |
|---|---|---|
| PIN1 | Serial port wire 1 | Connect TX/RS485A (Blue) |
| PIN2 | Serial port wire 2 | Connect RX/RS485B (Green) |

| | | |
|---|---|---|
| PIN3 | GND | Connect GNS (Black) |

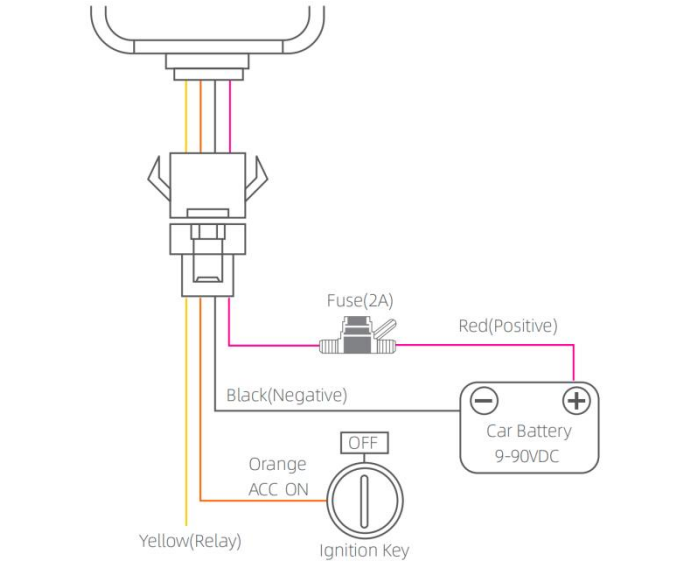
## 4.4 Wiring Diagram

(1) Use a multimeter to find the positive and negative terminals of the vehicle battery;

(2) Use a multimeter to find the ACC wire. To do this, connect the black probe of the multimeter to the negative terminal of the vehicle battery and the red probe to the vehicle ignition switch wire. When the vehicle key is in the OFF position, the voltage should be 0V. When the vehicle key is in the ON position, the voltage should be the vehicle supply voltage. The wire that the red probe of the multimeter is connected to is the ACC wire;

(3) Connect the red wire (positive terminal) of the device power cable to the positive terminal of the vehicle battery;

(4) Connect the harness according to the below diagram:




**Note:**

(1)The device must be equipped with manufacturer-specified accessories.

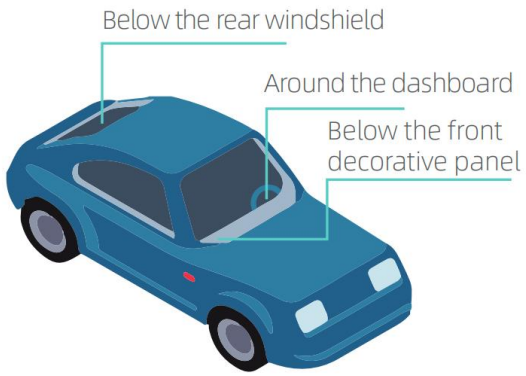
(2)The standard power supply for this device is 9-90V. Please choose the original power cable. Do not connect the positive and negative wires incorrectly during installation.

(3) Please refer to the device installation instructions.

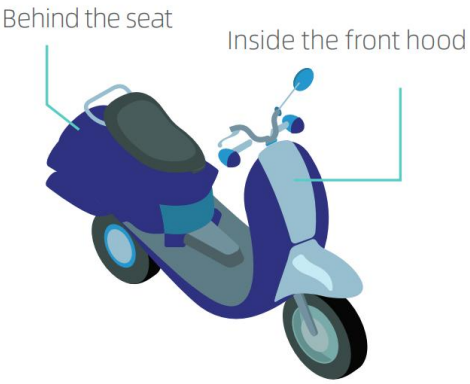
This device is an advanced satellite positioning system.It is recommended to choose an authorized distributor or professional personnel to perform the installation and debugging to ensure that the device is installed correctly

## Installation diagram：

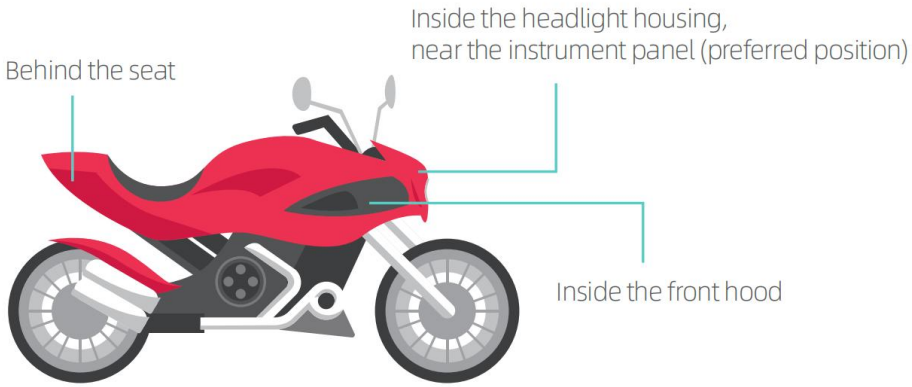
### Automobiles




### Electric bikes




### Motorcycles




Note:

(1) Install the product with the front facing upwards towards the sky.

(2) If the windshield has a metal heat-insulating layer or a heating layer, it may reduce the reception strength of satellite signals, making satellite positioning difficult. Please consider changing the installation position of the device.

(3) When installing equipment on electric bicycles and motorcycles, try to avoid placing it below the driver, as satellite signal strength may significantly decrease in this position.

## 5、APP

Please log in to the APP or the location services platform provided by your distributor to configure settings and operate device features.

GET IT ON App Store

iOS

GET IT ON Google Play

Android

# 6、Appendix

## 6.1 Battery Security

(1) Use only original batteries. Non-original batteries invalidate warranties and the manufacturer is not liable for any device damage caused.

(2) Prevent metal objects from shorting battery terminals.

(3) Do not bend or puncture the battery.

(4) Do not immerse or incinerate the battery.

(5) Charge battery near room temperature between 0°C and 45°C.

(6) Do not use damaged, leaking or deformed batteries.

(7) Do not disassemble or modify the battery

## 6.2 Troubleshooting

Refer to the solutions below if you encounter the following common faults. Contact your distributor or service provider if problems persist.

| Fault | Cause | Solution |
|---|---|---|
| Poor GPS Signal | Usingthedeviceinareaswithpoor signalreception,suchasinsidetall buildingsorbasements | Usethedeviceinanareawithgood signalreception |
| | Thedeviceisplacedfacedownor obstructedbyametallayer, preventingitfromreceiving satellitesignals | Placethedeviceinthecorrect orientationorchangethe installationlocation |
| Unableto Power On | Batteryisdrained | Connecttheexternalpowersupply tochargethebattery |
| | Fuseblown | Contact the dealer for replacement with a fuse of the same specifications and model |
| Unable to Connect to Network | SIM card not installed properly | Check the SIM card and reinstall it |
| | The metal surface of the SIM card is dirty | Clean the metal surface of the SIM card with a clean cloth. |
| | SIM card is damaged or invalid | Replace the SIM card with a valid one |

| | | |
|---|---|---|
| | Out of service area | Move to the service area of the network service provider. |
| | Weak signal | Move to a place with a strong signal and try again. |
| UnabletoCharge | Poorcontact | Check if the power cable of the device is properly connected |
| Locationcan’t befixed | SIM card data service is not activated | Contact the network service provider to activate data service |
| | SIM card is out of credit | Recharge the SIM card |
| | No reply to SMS commands | Ensure the device can connect to the network and the SIM card's SMS function is activated |

### 6.3 Warranty

**Note:**

(1) The product may be modified in the future without prior notice.

(2) The actual appearance and color of the product may vary.

(3) This warranty card is only valid for the presented IMEI number.

(4) Please keep this warranty card in a safe place. Please present this card and the original receipt when you need warranty service.

**Clauses:**

(1) The product is covered by a one-year warranty for non-human-made damage from the date of purchase.

(2) The following are not covered by the warranty, but may be repaired for a fee:

- ❖ Beyond the warranty period;
- ❖ You do not have a valid warranty card or receipt;
- ❖ The equipment or accessories are out of warranty;
- ❖ Product quality problems caused by unauthorized repairs, collisions, liquid ingress, accidents, modifications, incorrect input voltage, or tearing, altering stickers, device IMEI numbers, or anti-counterfeiting marks;
- ❖ Damage caused by incorrect installation or use that does not comply with the product manual requirements;
- ❖ Damage caused by force majeure such as fire, flood, or lightning strike;
- ❖ Warranty certificate does not match the product model or warranty certificate is altered;
- ❖ Damage caused by force majeure.