



Accurate
positioning

22°43'59.57617"N 114°03'03.61546"E



A07

4G Vehicle Positioning Terminal



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Modification Record

Version Number	Modification Date	Author	Modification Content
V1.0	2022.3.23	ZZF	Initial Version

1、Product Overview

The A07 4G Vehicle Positioning Terminal is a new generation vehicle positioning terminal independently developed by our company. It is equipped with an onboard satellite positioning platform that enables positioning tracking, monitoring and dispatching, trajectory analysis, alarm processing, anti-theft and anti-robbery, operational management, and statistical analysis for mobile targets such as vehicles and ships. It meets the monitoring and positioning management needs of various industries for mobile targets. The terminal features a waterproof design.

Mainly used for remote fuel and power cut projects for trucks, logistics vehicles, taxis, long-distance buses, and other vehicles.

2、Technical Parameters

2.1 Terminal Technical Parameters

Name	Parameters
Operating Voltage	DC9V ~ 98V
Operating Current (Average Current)	<60mA (DC12V)
Battery Operating Duration	2h
Backup Battery	3.6V/350mA
Operating Temperature	-20°C ~ +70°C
Operating Humidity	< 95%
Battery	350mAh (3.7V)
Dimensions	80mm*43mm*22mm

2.2 4G Communication Module Parameters

Name	Parameters
Operating Voltage:	DC3.4V ~ 4.5V
Operating Current (Average Current)	≤60mA
Operating Temperature:	-40℃ ~ +85℃
LTE-FDD	B1/B3/B5/B8
LTE-TDD	B34/B38/B39/B40/B41

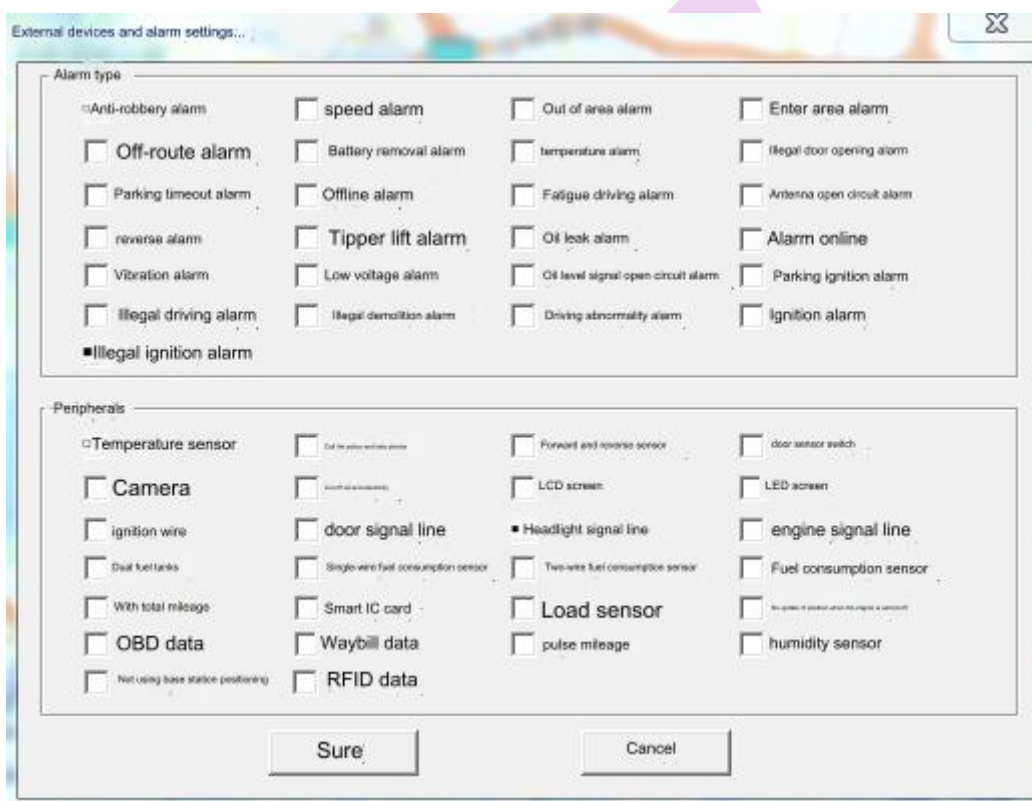
2.3 Positioning Module Parameters

Parameters	Specifications
Operating Voltage	DC3.3 ~ 3.6V
Positioning accuracy	2.5m CEP
Tracking sensitivity	-162dBm
Capture sensitivity	-147dBm
Cold start time	< 30s
Hot start time	< 1s
Speed measurement accuracy	0.1m/s

3、Function

3.1 Key Product Features

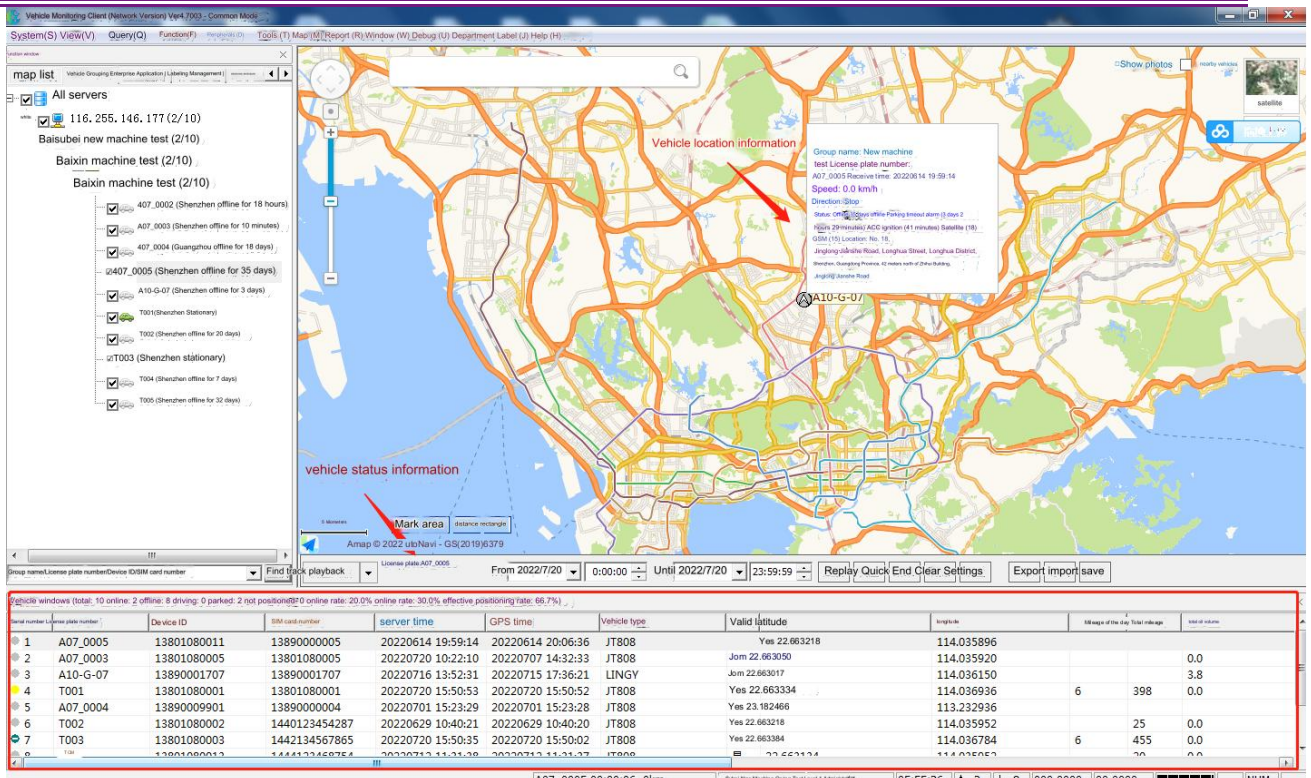
Key features include: vehicle position and status inquiry, fuel control, vibration alarm, geofence, trajectory inquiry, blind spot retention, overspeed alarm, mileage statistics, report analysis, and temporary power supply effectiveness (backup battery), etc. External device and alarm settings can be configured through the platform.



3.2 Key Feature Introduction

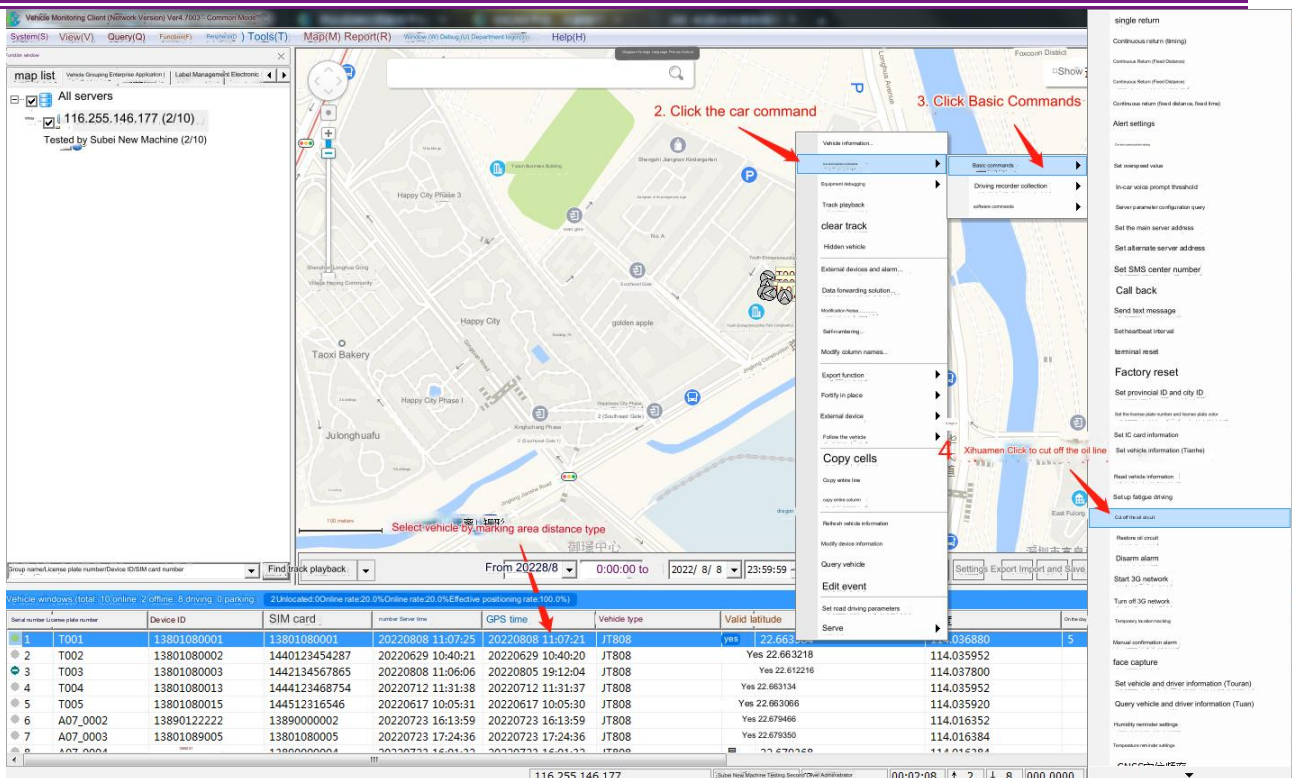
1. Vehicle position and status inquiry

The terminal can directly display the current status information of the vehicle in the system. The status information mainly includes: positioning information, vehicle status, ignition status, terminal status, operational status, working route, set parameters, mileage, etc.



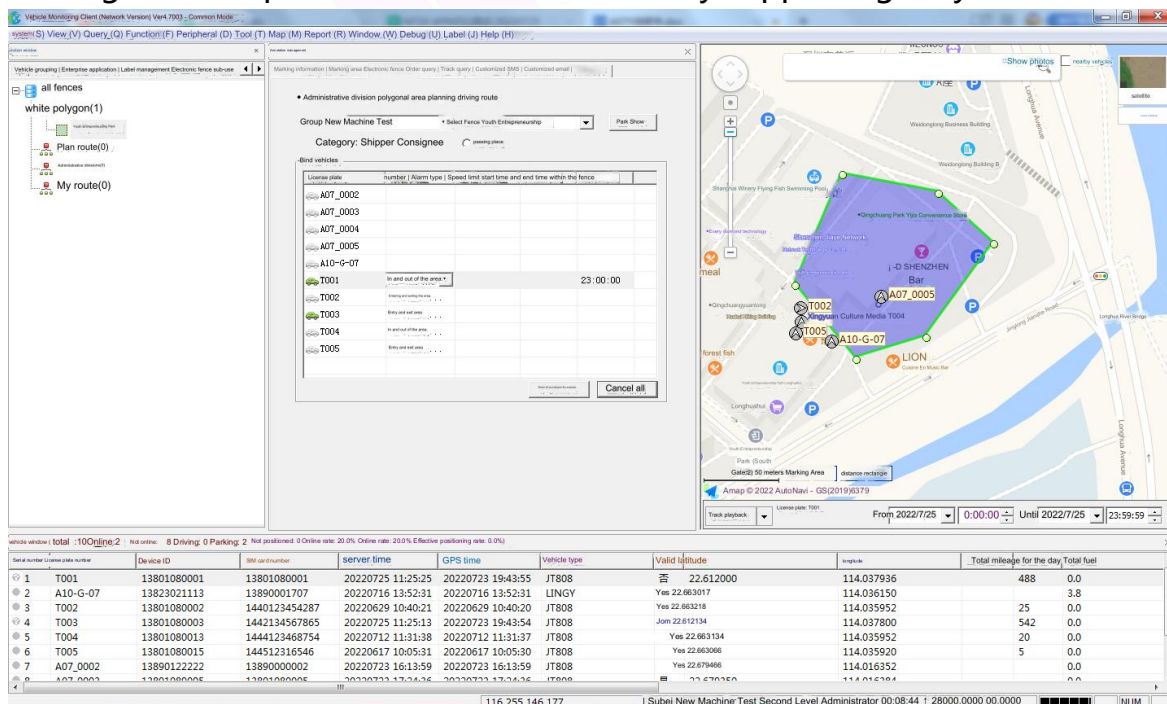
2. Fuel control

Through the central system, remotely control the vehicle's fuel and power cut-off, restore fuel and power, and When the vehicle terminal accepts the instruction, it will perform the corresponding operation on the vehicle circuit or oil circuit and send back the confirmation information of power/oil failure to the center once, and upload the current vehicle status at the same time. Once the vehicle receives the power/fuel cut-off command, the onboard terminal will remember this state until the central system issues a restore command.



3. Geofence

The terminal supports a maximum of 50 geofences, which are rectangular in range. When entering or exiting the geofence, the terminal will upload a prompt message to the platform. You can restrict the vehicle to operate only within the allowed range of the specified route node, currently supporting only 1 route node.



4. Remote restart

After the central system issues a remote restart command, the terminal will automatically power off and restart. This command is mainly used to power off and restart the terminal when communication is normal but other functions are not working properly, ensuring the terminal can operate normally.

5. Mileage statistics

The cumulative sum of the vehicle's position movement, measured in kilometers.

Statistical conditions: The vehicle must be ignited and have valid satellite positioning.

6. Blind area data retransmission

When the vehicle is in a GPRS signal blind area, the terminal will automatically save position data (when the vehicle is ignited) based on the scheduled return transmission time. Once the vehicle receives GPRS signals, the terminal will automatically upload the stored data from the blind area to the central system, with a maximum storage capacity of 1500 data entries.

7. Support for remote software upgrades

Remote issuance, the terminal host is upgraded to the specified file version, requiring cooperation from the manufacturer. (Via SMS and TCP/IP methods).

8. Vibration alarm settings

When the vehicle experiences vibrations exceeding a certain amplitude or tilts beyond a certain angle, the terminal will upload a data message to the platform.

Alarm method: When the first alarm occurs, an information message is immediately uploaded. Subsequent uploads will occur based on the scheduled return transmission time interval.

Cancel alarm method: Issue a cancel alarm command and ensure the vehicle status is normal. Issue a cancel alarm command and turn off the vibration alarm.

9. Overspeed alarm settings

After the platform sets the overspeed alarm threshold, if the vehicle's speed exceeds the alarm threshold and continues for more than 10 seconds, an overspeed alarm will be triggered, and the overspeed alarm flag will be included in the positioning information.

Alarm method: When the first alarm occurs, an information message is immediately uploaded. Subsequent uploads will occur based on the scheduled return transmission time interval.

Cancel alarm method: issue a cancel alarm command and the vehicle returns to normal. Issue a cancel alarm command and turn off the overspeed alarm.

10. Parking Timeout Alarm Settings

After setting the timeout alarm threshold, when the vehicle's speed is 0 and the time exceeds the timeout alarm threshold, a timeout alarm will be triggered. The timeout alarm flag is included in the positioning information.

Alarm method: When the first alarm occurs, an information message is immediately uploaded. Subsequent uploads will occur based on the scheduled return transmission time interval.

Cancel alarm method: Send a cancel alarm command when the vehicle's speed is greater than 0. Send a cancel alarm command and disable the parking timeout alarm.

11. Dual IP and Port Settings

The center can change the terminal's IP address and port number at any time. After the change, the new IP and port settings will take effect immediately.

12. TCP Heartbeat Interval Settings

Set the specified vehicle to send positioning information at regular intervals

according to this setting time. This positioning information is sent via TCP, and this command mainly serves as a TCP heartbeat command.

The default time for the terminal is 3 minutes, and this parameter is not lost during power failure.

After the TCP connection is established, it is maintained by the mobile company's router for a period of time. If the TCP transmission interval is too long, the connection will no longer be retained, and the onboard device can only re-initiate a connection to the center to output control mode settings.

13. Scheduled return transmission settings

It can be set to specify that the vehicle transmits positioning information to the center via TCP at scheduled intervals.

This includes the time interval for return transmission when the ACC is on and the time interval for return transmission when the ACC is off.

The time interval for return transmission when the ACC is on is set to a factory default of 30 seconds.

The time interval for return transmission when the ACC is off is set to a factory default of 60 seconds.

*When the time interval for return transmission when the ACC is off is set to 0 seconds, the terminal will return the transmission interval according to the ignition time interval regardless of whether the ignition is on or off.

*If the return transmission time interval after the engine is off > 0 seconds, the terminal will return according to the return transmission time intervals when the engine is on and off.

Note: The minimum unit for the time interval of returning positioning information when the ACC is on is 1 second.

4. Terminal parameter settings

4.1 IoT card platform query device parameters

Log in to the IoT card platform, edit the basic query command <CKTF>, and send it to the device's 11-digit terminal number. The terminal will return parameter

information to the IoT card platform, including the main channel IP and port, secondary channel IP and port, device terminal number, return data interval, software version, and other terminal parameters.

4.2 Terminal factory configuration parameters

The default configuration for general terminal factory parameters is as follows:

```
<TF*T:106.3.45.252,8988*t:116.255.146.177,6973*A:CMNET*N:13801087001*I:1087001*GP:OK*CG:1*CSQ:26*C:5*Z:20*j:2*F:5*CS:0*G:0,B,V*Z:0,YC-A07G-SG20Q2V1.1.02-220706>
```

Main configuration character explanation:

T: represents the IP and port of the main channel

t: represents the IP and port of the secondary channel

N: represents the terminal SN number (generally based on the barcode attached to the terminal, fixed at 11 digits)

C: represents the data transmission interval (seconds) when the ACC is on

F: represents the data transmission interval (seconds) when the ACC is off

4.3, Modify terminal parameters

Configuration text starts with '<' and ends with '>', with each field separated by '*' and ':'; only configure the options you need.

If you only need to configure the main channel, send:
<SPTF*P:TFGPS*T:122.049.040.174,8288>

If you only need to configure the terminal number, send:

```
<SPTF*P:TFGPS*N:123xxxxxxx>
```

If multiple parameters need to be configured, they can also be configured in one text, as follows:

```
<SPTF*P:TFGPS*T:122.049.040.174,8288*t:122.049.040.174,8289*N:13412345678*C:30*F:30>
```

4.4, Reset SMS

```
<RETF>
```

After the terminal receives this command, it will reset the terminal and redial to go online.

```
<RECTF>
```

After the terminal receives this command, it will restore factory initialization.

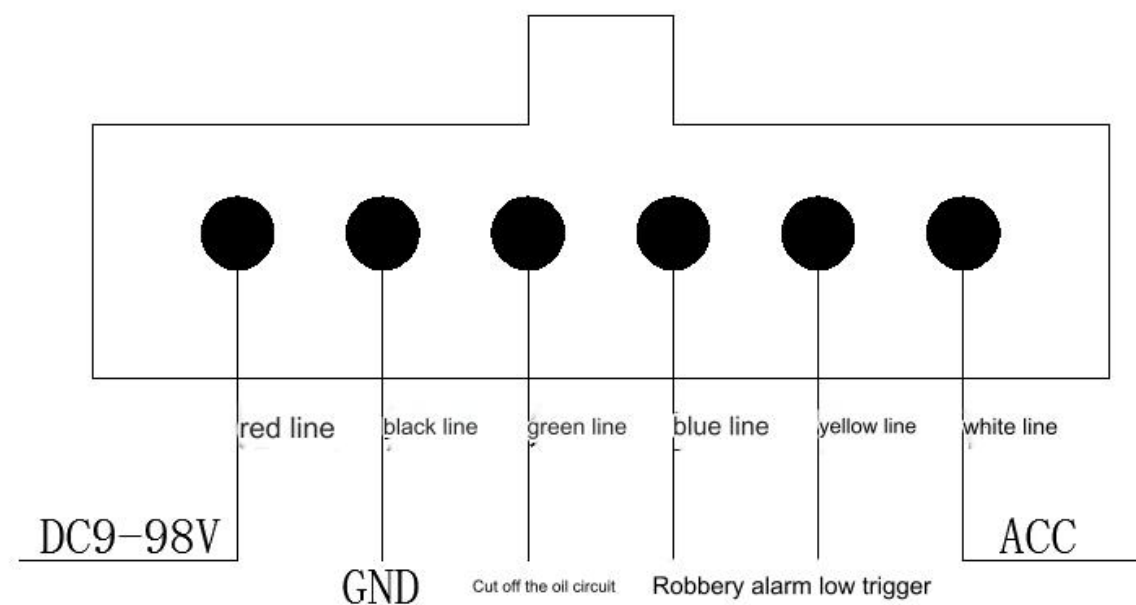
Note (specific terminal parameter settings can refer to the 'Terminal SMS Configuration List V2.08' document).

5、Installation

5.1, Indicator Light Definition

Product Indicator	Indicator Light Status	LED Light Display
Light	Definition	Status
Power Indicator Light (Red Light)	No Power	Light Off
	Power Available	Always On
Communication Indicator Light (Green Light)	No Card	Once every 2 seconds
	Searching for network/Card overdue	Always On
	GSM registration successful	Once every second
	Connected to server successfully	Five times per second
Positioning indicator light (blue light)	No GPS data	Light Off
	GPS data available but not positioning	Once every 2 seconds
	Positioning	Once every second

5.2, Terminal interface pin definitions



Serial number	Color	Interface definition	Remarks
1	Red	Power	DC9~98V
2	Black		GND
3	Green		Cut-off Fuel Line
4	Blue		Robbery Alarm
5	Yellow		Low Trigger
6	White		ACC

6、Product Physical Introduction

6.1 Physical Schematic Diagram



(Unit:mm Error:±0.5mm)

7、Installation Precautions

1. The device is equipped with a built-in GSM antenna and GPS antenna. During installation, ensure that the front side is facing upwards (the side with the indicator light facing the sky), and that there are no metal objects above to block the signal.
2. When installing this product, it is essential to ensure that the main unit casing is tightly combined with the vehicle body to guarantee the effectiveness of vibration detection alarms.
3. Please pay attention to waterproofing when using the device. Place it in a location that is not prone to water ingress and has good heat dissipation. Do not plug or unplug the connection wires while powered on to avoid damaging the device.
4. Please make sure to completely power off before replacing the SIM card.
5. If you encounter abnormal phenomena, please do not attempt to repair it yourself; contact the manufacturer in a timely manner.

8、Troubleshooting

1. Terminal is offline (communication indicator light is solid green or blinking slowly once every 2 seconds)

Check if the SIM card balance is insufficient; ensure the card is properly installed; verify if the terminal supports this type of SIM card; check if the device is powered (DC9-98V).

2. Platform terminal is offline

Check if the terminal is online (is the communication indicator light blinking quickly (5 times per second)); check if the terminal configuration parameters IP port are correct.

3. Terminal is not positioning

Check if the terminal is facing upwards (the side with the indicator light facing the sky); Current environment GPS\Beidou signal is weak, please move the terminal to an open area.

9、Packing list

Serial number	Name	Quantity	Unit	Remarks
1	A07 main unit	1	Set	
2	Manual, warranty card, certificate of conformity	1	Copy	Three-in-one
3	Cable tie	2	Piece	
4	Packaging box	1	Item	

10. After-sales service

1. For equipment damage caused by non-human factors or product quality issues within the warranty period, please contact the dealer in a timely manner.
2. Damage caused by unauthorized disassembly by the customer or force majeure (such as floods, vehicle accidents) will not be repaired.
3. After the warranty period, any product damage or failure due to use will incur a cost for repair materials.
4. We provide free consultation and technical services to customers regarding product purchase, use, installation, etc.

User name			
Communication address			
Contact number			
Seller name			
Purchase date		Product model	
Purchase location		Product serial number	
Local sales unit	(Seal)	Local sales phone	
Warranty date	Warranty content		

In order to provide better service, please keep (warranty card) properly.