Wireless
GPS Car Alarm System

USER MANUAL

(Model: TK210)

TOPTEN®

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Preface

TK210 GPS car alarm provides a reliable solution for safeguard & tracking the vehicle. It has 2 unique functions:

- ✧ It is specially used to work with the central lock system or ordinary car alarm system. The user can use the original remote control to arm/disarm the TK210 for car security.
- ✧ It has wireless immobilizer, which will lock the engine secretly. In arming status, even the main unit is destroyed, the car can not be started.

TK210 supports tracking by SMS/GPRS, user can check the car's real physical address easily by mobile SMS. It is not only an advanced car security product, but also a reliable tracker for fleet management.

Read it Firstly:

Please read this manual thoroughly before you use the device; please keep it for future reference.

Attention:

(1) Please keep the device away from water, humidity, high temperature, heavy dust or strong magnetism.

(2) Please prepare a valid GSM SIM card (850/900/1800/1900Mhz) in advance.

Warning:

We strongly suggest user let the professional car electrician to install the system.

I. Features & Functions

1. Arm/disarm by SMS remotely, or by the remote controller of original central lock system or existing car alarm system, or by phone call.
2. Upgrade the ordinary car alarm to GPS alarm system;
3. Check the car's real physical address(such as city name, street name..) ;
4. Track by mobile SMS to get the coordinates or the Google map's URL;
5. Live tracking by web-based tracking center via GPRS network;
6. Track on command or by time interval via SMS/GPRS.
7. Cut off engine to stop the car safely by SMS/GPRS;
8. Two-way talking function(optional) & voice monitoring function;
9. Wireless immobilizer which will kill the engine secretly & reliably;
10. Vibration alert, door opening alert and ignition on alert;
11. Power cut-off alert & low power alert;
12. Movement alert;
13. Geo-fence alert (radius range: 0.1~99KM);
14. Over-speed alert (speed range:1~999km/h);
15. SOS button to call for help in case of emergency;
16. Inbuilt 4Mb data logger to store the offline GPS data where there is no GSM coverage;
17. Mileage calculation function (=odometer)
18. Built-in rechargeable backup battery; when the car battery is cut off or damaged, the built-in 580mAH backup battery can work for emergency check, and the system will send out power failure alert immediately.
19. Two kinds of location information; user can check the GPS latitude, longitude, speed, direction. If there is no GPS signal, user could also locate the car by GSM base station code (the GSM operator's support is needed)
20. Power save design, the power consumption is very low.
21. Strong ability of anti-tamper. In arming status, the engine will be locked, even the main unit is completely destroyed, there is no way to start the car.

II. How to Operate it

SMS Command Format

User can send SMS instruction to operate the tracker by any mobile phone, the format of the instruction is:

User Password(******)+ Control Code(XXX)

The default user password is **111111**.

If the user password is changed, user should send the SMS instruction with the new user password instead of 111111.

XXX is the control code, all the letters must be **capital letters**

There is no space between the user password & the control instruction.

Authorize the Alert-received Mobile

SMS command: **111111*10 Mobile #1 *20 Mobile #2 ***

In case of alarm, if user wants to get the alert SMS from the tracker, he/she needs send the following SMS to program the system firstly, otherwise, the alert information can not be received correctly.

Example: User sends the SMS 111111*10 13922713571 *20 13711189059 * to the tracker's SIM card number, if there is any alert, system will send alert SMS to both of these two mobiles. In case of SOS alert, the system will only send alert to the mobile #2

Change User Password

SMS command: **111111PSW nnnnnn**

This instruction is used to change the user password. The length of the user's password is 3~6 digits. Users are suggested to change to the new password in use.

Example: User sends the SMS "111111PSW12345" to the system SIM card number, and gets the confirmed SMS "111111PSW12345" in 3 seconds. It means that the user password has been changed to 12345.

Remark: Please keep the password deep in mind if it is changed.

Check the Real Physical Address

SMS command: **111111ADD**

When user sends this SMS command to the tracker, the tracker will automatically send back the car's real physical address (such as city name, street name) to your mobile by SMS. There is no need for the user to setup any server.

Remark: (1) The GPRS service of the tracker's SIM card must be activated, and the correct GPRS setting is needed (refer to the chapter of the setting of GPRS connection), user can set up the GPRS upload time interval to 0 so as to save the GPRS flow; (2) The physical address depends on the Google map's address information. If the place has very detailed information on Google map, then the physical address by SMS is very detailed.

Check the GPS Coordinates by SMS

SMS command: **111111CHK**

This instruction is used to inquiry the vehicle's location & system's status.

The system will send back the SMS, includes the similar information, such as "Car is Armed……"

Check the location by Google Map's URL

SMS command: **111111MAP**

The user sends this SMS command to the tracker's SIM number, the tracker will automatically send back the SMS including the Google map's URL, the user can use smart phone(be able to visit internet) to open the URL link, the car's location will be showed on the Google map.
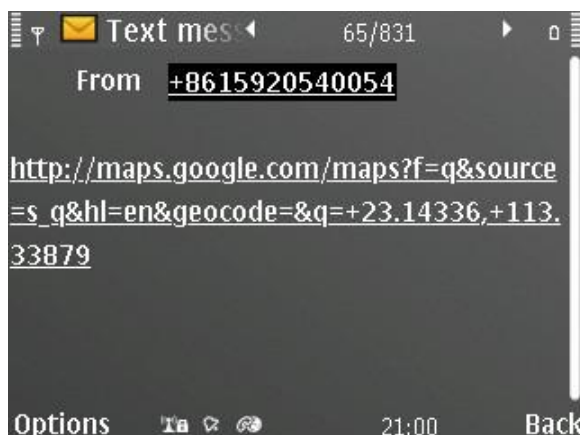
Arm/Disarm the System by SMS

SMS command: **111111ARM**

This SMS instruction is used to arm the system

SMS command: **111111DSM**

This SMS instruction is used to disarm the system

Arm/Disarm by Phone Calling

User could also use the **first** alarm-received mobile phone to call the system SIM card number, so as to arm/disarm the system.

Arm: After hearing several ring tones, if the systems hang up the call automatically, and call back you, it means that the system is armed.

Disarm: After hearing several ring tones, if the system hangs up the call automatically, and don't call back you, it means that the system is disarmed.

Note:

(1) There is no communication fee for this operation, it is a very convenient way to arm & disarm the system.

(2)The SIM card inside the device must have the function of Caller ID Display.

(3) Only the 1st authorized mobile phone can realize this function.

Stop the Car by SMS

SMS command: **111111STP**

This instruction is used to cut off the car's power supply or fuel supply, so as to stop the car.

If the car's speed is less than 30KM/H, the car will be stopped immediately. If the car's speed is over 30KM/H, the instruction will not be carried out until the car is slow down at speed of less than 30KM/H.

In some emergency case, you can send this SMS instruction <u>twice</u>, the car will be stopped immediately, no matter what the speed is.

Attention: It is very dangerous to stop the car when the vehicle is running at high speed. We do not take any responsibility to the consequence caused by this action.

Restore the Stopped Car to Normal Status

SMS command: **111111RES**

This instruction is used to restore the car to normal status after stopping the car.

It is also used to stop the receiving of SOS alert SMS once the anti-robbery SOS switch is pressed down.

Monitor the Voice around the Car

SMS command: **111111MON**

This instruction is used to monitor the voice around the car.

After sending out this SMS, the tracker will call back immediately, then, user can monitor the voice around the car upon picking up the call.

Two-way Talking with the Car

SMS command: **111111MON:Tel**

This instruction is used to program the phone number which is used for carrying out direct monitoring or talking.

User uses this phone number to call the tracker, it will be connected automatically without driver's permission. By this way, user can monitor the voice or talk with the driver freely.

Example: 111111MON:13922713571

Note: If the Tel is the same as the first alarm-received phone (111111*10 Mobile #1*20 Mobile #2*), then this telephone can only be used to carry out direct monitoring, it can not realize the function arm/disarm by calling any more.

Set up Movement Alert

111111MOV1   to enable the movement alert, the present location is the center.

111111MOV0   to disable the movement alert

111111MOV？   to check the setting of movement alert

If user sends 111111MOV1 to activate the movement alert function, every time when the system is armed, if the car moves away from the present

parking point for about 80 meters, the movement alert will be triggered.

Set up Geo-Fence Alert

111111FEN0   Disable the Geo-fence

111111FEN1   Enable the Geo-fence, using the stored setting

111111FEN？   Check the setting of geo-fence

111111FEN1(YL:a,XL:b,DL:C)   Set up the all the parameters

111111FEN1(YL:a) Setup the latitude separately

111111FEN1(XL:b) Setup the longitude separately

111111FEN1(DL:C) Setup the radius separately

 YL:a,   a is latitude of the reference point

 XL:b,   b is the longitude of the reference point

 DL:c,   c is radius of latitude & longitude, the range of the value is (0-990), the unit is :100 meters. The range is 0~99000 meters.(0-99KM)

 Remark: (1) FEN, XL, YL,DL   must be in capital letter.

         (2) The Setting will be stored and used all the time.

Example: If the fence's center coordinate is: latitude:+23.1400, longitude:+113.4500, the radius is 5KM,   then the SMS instruction is:

 111111FEN1(YL: +23.1400,XL: +113.4500,DL:50) .

If the vehicle is running across the boundary of the fence, the system will automatically send out alert SMS.

Set up Over-speed Alert

111111SPD:X   x is the speed in KM/H , maximum value is 255M/H

  (For example: 111111SPD:120, if the car speed is over 120KM/H, it will send SMS to warn you)

111111SPD:0   to disable the over-speed alert. It is the default setting

When the over-speed alert function is activated, if the car is running over the speed limitation, the tracker will send out alert message.

 Remark: this function is just for reference, because there might be some time delay or error in detecting the running car's real speed by GPS.

Adjust the Vibration Sensor's Sensitivity

111111SHK0

Normal status, when sensor is activated, it will trigger the alarm immediately. It is the default setting.

111111SHK1

Time-delay status, if the sensor is activated for 3 seconds continuously, it will trigger the alarm. This setting can avoid some false vibration alarm.

Turn ON/OFF Sleep Mode.

111111SLEEP0   Turn off sleep mode, it is the default setting

111111SLEEP1   Turn ON sleep mode, it is used to save power & GPRS flow. In this working mode, if the engine is OFF, the system will go into sleep mode after 3 minutes, the power consumption is very low & GPRS connection is close. Once there is any vibration, or alarm, or incoming call/SMS, the system will wake up immediately. In sleep mode, the device will wake up for every one hour, and report the location by GPRS.

Setting for Mute Alarm.

111111MUTE:0   The siren will sound if there is alarm, it is the default setting

111111MUTE:1   The siren will not sound if there is alarm, but system will still send out alarm by GSM network.

Setting for Odometer.

111111ODO: It is used to read the present odometer value.

111111ODO:R   It will reset the device's odometer reading to 00000 & start calculation from the beginning.

111111ODO:0   It will reset the device's odometer reading to 00000 & close the calculation of odometer.

111111ODO:1~999999   It will make the device to start calculation of odometer from the base value. Example: 111111ODO:38980, then the device will reset the initial odometer reading as 38980KM & start the calculation again.

Check the IMEI No.

111111REG

This instruction is used to check the GSM module's IMEI number.

Change the Heart-beating Interval.

111111HRT:1~999

This instruction is used to change the time interval of heart-beating GPRS data package. The default setting is 3 minutes.

If the GSM networks do not detect the tracker's activities for a certain time, it will close the GPRS connection and the device will be offline. User can adjust the value so as to avoid this situation. Example: 111111HRT:5 (set time interval of hear-beating as 5 minutes)

SOS Anti-robbery Alert

once the SOS switch is pressed down & hold for at least 2 seconds, the system will send alarm SMS to the second alert-received mobile & the center number. User can send command 111111RES to release it.

III. The Setting for GPRS Connection

The GPRS setting is necessary for using the following 2 functions:
(1) Check the car's real physical address by send 111111ADD
(2) Online tracking service by web-based tracking platform
   (www.track800.com   or   www.topten-track.com)

SMS format: **111111WWW** : **Item**   (separated by ：)

Compositive SMS Command for GPRS Setting

(Please kindly noted that the device GPRS ID is the last 14 digits of the IMEI, you can check it on the sticker on the device or send 111111REG to get it)

User can use one SMS to do all the GPRS setting. For example, if the APN name is internet, APN user name web and   APN password gprs , GPRS report time 3 minutes(=180seconds).   Server's IP: 98.143.144.145, Server's Port: 8500, then you can do all settings together in one SMS command:

 11111WWW:APN:internet,web,gprs;IPN:98.143.144.145;COM:8500;RPT:180;GPRS:1;

✧ **IPN:XXX.XXX.XXX.XXX;**

This is to set the server's IP address.
Eg: 111111WWW：IPN：98.143.144.145；
If user wants to use domain name as server, please use DSN instead of IPN
Such as: 111111DSN:www.track800.com;
If user wants to use UDP transmission, please use UDP instead of IPN
Such as: 111111WWW：UDP：98.143.144.145；

✧ **COM:XXXX;**

This is to set the server's COM port No.

Eg: 111111WWW：COM：8500；

✧ **APN:XXX;**

This is to set the APN (access point name). Please use "," to separate the APN, APN username & APN password.

Eg: 111111WWW：APN：web.gprs.mtnnigeria.net,web,gprs；

✧ **RPT:XXX;**

This is to set the upload time interval. The unit is second, the value is between <u>15-999</u> seconds.

The default setting is 0, the tracker will not upload data but GPRS is online.
Eg: 111111WWW：RPT：60；   (Upload time interval is every 60s)

✧ **GPRS:0/1;**

GPRS:0;   is to close down the GPRS;

GPRS:1;   is to open the GPRS.
Eg: 111111WWW：GPRS：1； (Open the GPRS connection)

Check the GPRS Settings

111111WWW:
    You can send <u>111111WWW:</u> to check the parameters if you forgot.

Default GPRS Setting

    The default GPRS setting is:

- ✧ Server IP: www.track800.com
- ✧ Server Port:8500
- ✧ APN: internet
- ✧ GPRS report interval: 0
- ✧ GPRS connection: open

IV. Specifications

Size of the main unit:	98*64*25 (mm)
Weight of the main unit:	0.1KG
Working temperature:	-20 ~ 80℃
Humidity:	0 ~ 95%
GSM frequencies:	Dual-band:900MHz/1800MHz (or Quad-band: 850MHz/900MHz/1800MHz/1900MHz)
GPS chip:	Latest SiRF-Star III chipset
Receiving ways	20 channel
Working frequencies	1575.42Mhz C/A（GPS）
Receiving sensibility	-162db
Positioning accuracy	≤10m (wide-open area)
Speed accuracy	≤0.2M/S (wide-open area)
Positioning mode	Auto 2D/3D
Working voltage:	7~35 VDC
Power Consumption:	Working mode: <50mA; Sleep mode: <23mA
Inside Backup battery:	Rechargeable 3.7V 580mAh Li-ion battery

V. FAQs & Troubleshooting

FAQ	Troubleshooting
I call the tracker, it does not ring	(1) The GSM SIM card has no credit; (2) The SIM card is protected by PIN code; (3) Fix the GSM antenna to open place to test; (4) The SIM card is placed correctly in the slot; (5) Check the connection of the GSM antenna, or change another GSM antenna to test;
I call the tracker, it rings, but it doesn't send back response SMS	(1)The user password is wrong, please use the correct password or reset the password to test; (2) Low power, please use outside 12VDC power supply to power on the unit to test
I can not get the alarm message	(1) The SIM card inside the device has no credit; (2) The Alert-received mobile number is not programmed correctly, or the SMS instruction is not in correct format; (3) The mailbox of the user's mobile is full;
I can not get the correct GPS coordinates or the location is wrong	(1) Please make sure there is no metal obstacles above the GPS antenna. Fix the GPS antenna to open place to test; (2) Please check the connection of the GPS

	antenna; (3) Chang another GPS antenna to test; (4) In cloudy condition, it is a little hard to get the GPS signal, and the GPS coordinate might have some errors.
I can check the location, but I can not get the alert SMS when the car moves	(1) Please setup the system firstly. (authorize SMS-received mobile number, etc); (2) In arming status,the device only warn you once the car moves at about 50 meters away from the parking place;
Much noise when monitoring voice	(1) Check the two sides of the MIC wire; (2) The MIC should be away from the engine, unit heater, GSM/GPS antenna and other obstacles

VI. Packing List

Standard Package

| Item name	Quantities
Main unit with internal shock sensor	1pcs
GSM antenna	1pcs
GPS antenna	1pcs
Microphone	1pcs
SOS button	1pcs
Wiring harness	1pcs
GSM antenna manufacturer:	TOPTEN ELECTRONICS TECHNOLOGY LIMITED

GSM antenna model: GSM-0121001
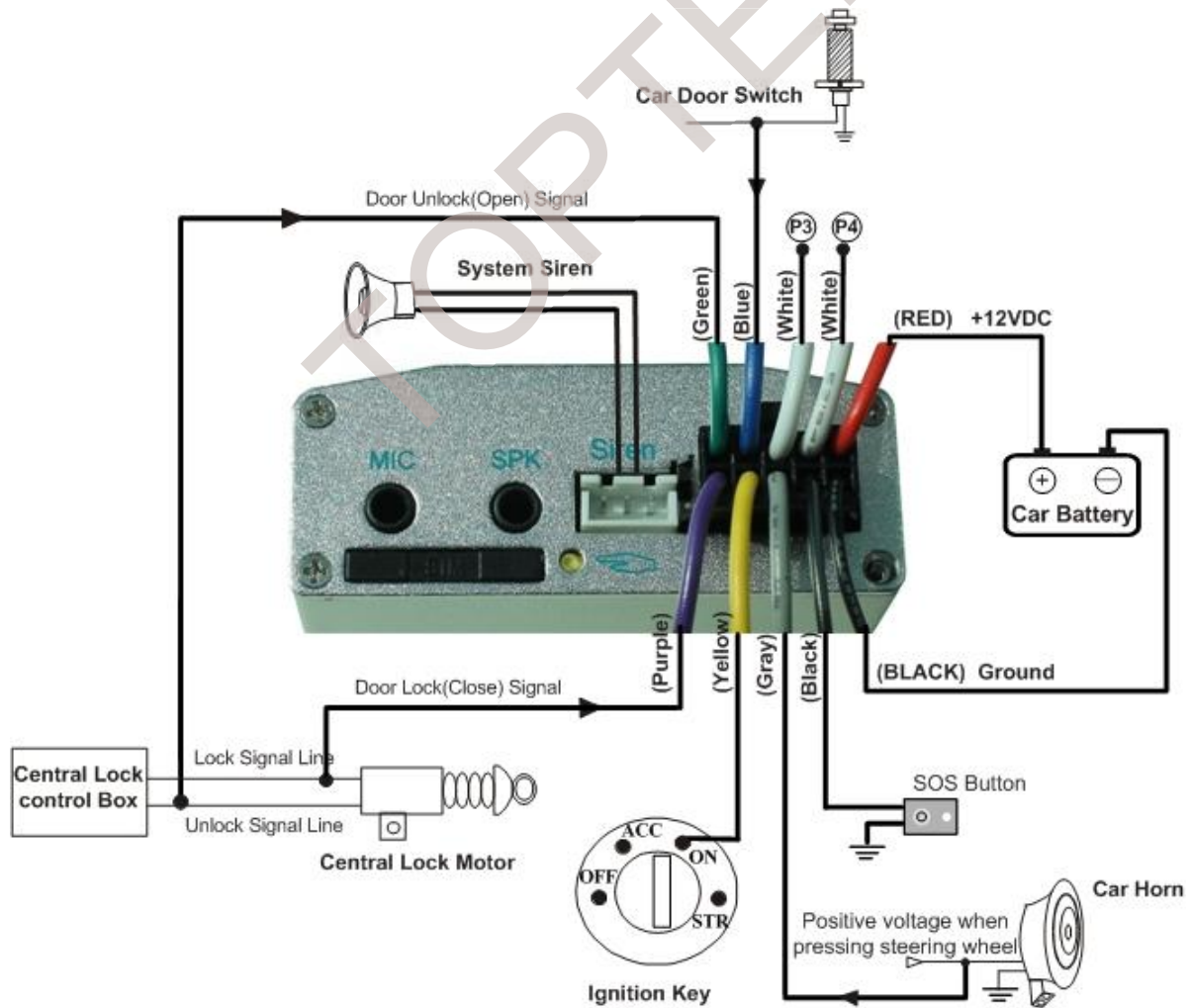**Note: only antenna sold together with TK210 could be used.**
Optional Components

Item name	Function
Speaker	It is used to carry out 2-way talking, to broadcast the voice to the car
six-tones siren	It will sound when the alarm is triggered

VII. Installation

SIM card holder   Press down to spring out the SIM card holder   Wiring Socket
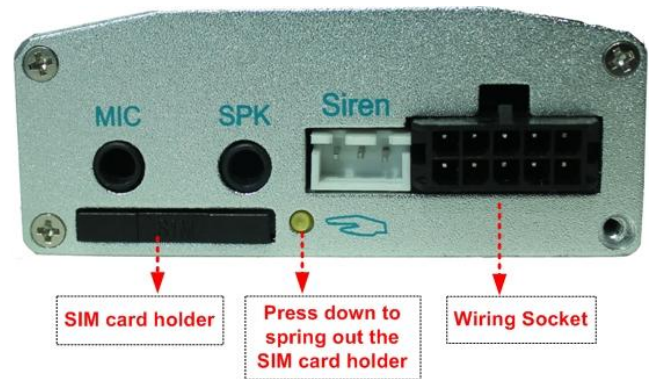
Wiring Diagram

Important Notice

    (1) Please read the manual carefully before installation and make sure you understand the installation wiring diagram and the car circuit & wiring firstly. We strongly advise you to ask professional car electricians to do the installation.

    (2) Please prepare a valid GSM card (CDMA card not supported) with Caller ID Display & GPRS function. And use an ordinary mobile phone to check it is not PIN-code protected and the SMS has sending & receiving function.

Note: installation for SIM card

Please make sure that main unit is powered off, and then use a pin to press the yellow button, then insert SIM card into the SIM card holder. **(Attention):** <u>If you want to take out the SIM card from the main unit, please power off the main unit firstly, otherwise, it might damage the unit</u>.

Explanation on Installation

(1) IMPORTANT! How to fix the accessories

✧ **Fix the Main Unit**

Choose a place for the main unit first. Please fix the main unit at a secret place to avoid being destroyed by theft. Please keep it away from the high-temperature, humidity or strong magnetic object (such as reversing radar, alarm). Please fasten it tightly. (Recommended places: under dashboard, under seat)

✧ **Fix the GPS antenna**

While fixing the GPS antenna, it is better to place the flat magnetic side downside. Make sure there are not any metal or shielded obstacles around the upside of the GPS antenna, so that it can receive the satellite signal from upside the sky very well, the GPS antenna should be placed at broad & secret place too. It should be drew straight and kept away from the sound box or speaker. (Recommended places: Upside & inner part of the driver's door rim, inside dashboard, secret place of front windshield, under bumper)

✧ **Fix the GSM antenna**

Fix the GSM antenna at place where there is no metal shield, so that it can receive signal very well. And keep it a certain distance from other wireless equipments. It is better fixed at a secret place so as to avoid tamper. The antenna is external antenna for the non-standard SMA antenna, max Gian is 3dBi.

✧ **Fix the microphone & speaker**

Please fix the microphone at a secret place nearby the driver place so that it can pickup the voice clearly, please keep speaker away from the microphone so as to avoid the echo interference.

✧ **Fix the SOS button**

The SOS button is already fixed to the wiring harness.

Please fix the SOS button secretly under the left of the dashboard so that the driver can easily touch it in case of emergency.

✧ **Fix the ACC ignition wire (Yellow line)**

Connect the YELLOW line to the ignition key ON position.

✧ **Fix the door switch wire (Blue line)**

Connect the BLUE line with the side-door switch.

✧ **Fix car horn wire (Gray line)**

This line is optional installation. You can let it disconnected according to your car's situation. It is used to assure that the tracker can detect the illegal intruder when the system is armed (/disarmed) by central lock signal lines.

The gray line can also be connected to the positive pole of the direction lamp.

✧ **Fix the power supply wire (Red line and black line)**

The tracker is specially designed for normal car which has +12VDC power supply. Please connect the power supply lines directly to the car's battery.

For the truck, it is 24VDC power supply, the device can also work on truck, but the cut-off function can not work. That is to say, the wireless immobilizer and the 2 white lines will not function.

(2) Check the wiring:

Try to use the double-sticky paper or other material to fix the device. Fasten tightly the junction point of accessories and wires. Pay attention to insulation and precaution of water and hot temperature. Please check the installation according to the wiring diagram.

(3) Check the function

Please check the key functions after installation, such as

--Sending 111111CHK to see if it gets correct location.

--Sending 111111STP to check if the car can be stopped

---Sending 111111MON to check if monitoring is OK

If there is no GSM or GPS signal, please check the connection of the GSM antenna, or to place it to other place to test; If there is many noise when monitoring the voice, please fix the microphone away from the speaker or magnetism; If it can not stop the car, please check the connection of the wireless immobilizer or the 2 white lines.

VIII. Maintenance

Suggestions

✧ Please let the professional to do the installation & maintenance of the GPS terminal. If there is any disassembling or repair without our permission, we keep no responsibility for any loss caused thereafter.

✧ Please keep the terminal in dry place. In case of soaking or leaking water, contact the local professionals. Do not start the car yourself, or we take no responsibility for any loss caused thereafter.

✧ When the car is inside buildings, cave, tunnel, or very close to tall buildings, it is normal that the device might not get GPS signal at that moment.

✧ Please check the balance of the tracker's SIM card periodically. If there is no credit in the SIM card, the device can not work normally.

✧ The backup battery. The backup battery can only work for a certain time when the car battery is temporarily powered off.

✧ If the device can not get GSM signal or GPS signal, please try to check the connection of the antennas, it might get loosen or damaged. Please try to exchange to use another good antenna to test.

FCC ID: X3U-TK210
Model No.: TK210
Manufacturer: Topten electronics Technology Limited.
      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.

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

 "To comply with FCC RF exposure compliance requirements. The device must be installed by professional car electrician. The antennas and Microphone and speaker used for this transmitter must be installed to provide a separation distance of at least 25 cm from all persons (driver and passengers) and must not be co-located or operating in conjunction with any other antenna or transmitter."

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.