GPS Personal Tracker

USER MANUAL

(Model: PT99)

Version 3.0

(Date: Jan 27, 2019)

CONTENT

Preface

PT99 GPS tracker is the tracking device for person or asset for anti-theft.

It has four types of working mode for different applications. The device working in deep sleep mode has extreme power saving design, it can be used as personal tracker or asset tracker with long standby time.

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 heavy water, high temperature, heavy dust or strong magnetism.

(2) Please prepare a valid GSM SIM card in advance.

(3) For safety, please keep the SIM number of your tracker in secret

Warning:

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

I. Features & Functions

1. Track on command or by time interval or <u>by clock</u>;
2. Arm/disarm by SMS/platform or phone call;
3. Check the <u>car's real physical address (such as city name, street name..)</u>;
4. Track by mobile SMS to get the latitude, longitude, speed, direction & odometer etc.
5. Check the location directly by the <u>Google map's URL</u>;
6. Vibration alarm;
7. SOS alarm;
8. Over-speed alert;
9. A-GPS function, strong ability of receiving GPS signal;
10. <u>Check the coordinates via LBS, even there is no any GPS signal.</u>
11. Voice monitoring & two-way talking;
12. Built-in shock sensor for power saving & triggering alarm;
13. Battery low-level alarm;
14. Support blue-tooth command;
15. There are 4 types of working mode for power saving flexibly. In extreme power save mode, the tracker could work for months;

II. **How to Operate it**

The default user password is **111111**.

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

XXX is the control code, all the letters must be **capital letters or in small letters**, command with mixed capital letter & small letter is not recognized by system

Authorize the Alarm-received Phone No.

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

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

Example: User sends the SMS 111111*10 13922713571*20 18902267400* to the tracker's SIM card number, if there is any alarm, system will send SMS to both of these two mobiles. In case of SOS alarm, the system will only send alarm to the mobile #2

Arm/Disarm by Phone Calling

User could also use the 1st alarm-received mobile phone to call the tracker's 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 **alarm-received mobile phone** can realize this function.

Check the Vehicle's Status

SMS command: **111111CHK**　　(or **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 "Armed……"

User could also use the 2nd alarm-received mobile phone to call the tracker's SIM card number, the tracker will hand up the calling & send back the location directly.

Arm/Disarm the System by SMS

SMS command: **111111ARM**　　　(or **111111arm**)

This SMS instruction is used to arm the system

SMS command: **111111DSM**　　　(or **111111dsm**)

This command is used to disarm the system & stop sending alert SMS.

Check the location by Google Map's URL

SMS command: **111111MAP**　　　(or **111111map**)

Upon receiving the SMS command, the tracker will automatically send back the SMS including the Google map's URL, user can use smart phone (GPRS data service is enabled) to open the URL link, the car's location will be showed on the Google map.
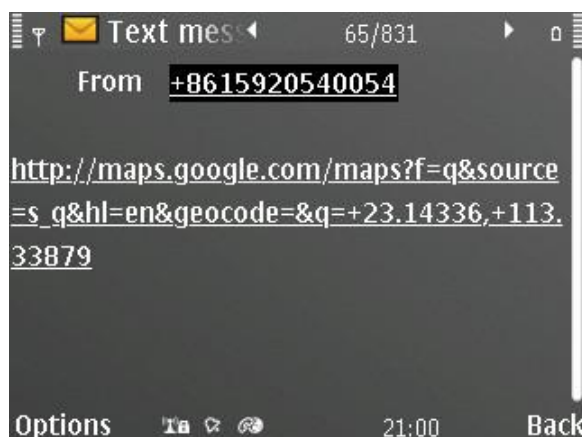
Check the Real Physical Address

SMS command: **111111ADD**   (or **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.(it need server's support for address translation) .

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Change User Password

SMS command: **111111PSWnnnnnn**   (or **111111pswnnnnnn**)

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.

Monitor the Voice around the Car

SMS command: **111111MON**

This instruction is used to monitor the voice around the car. The SIM card inside the system pays for the communication fee.

SMS command: **111111MON!**

This instruction is used to monitor the voice around the car. The user's telephone pays for the communication fee.

Example: User uses the mobile 13780012345 to send 111111MON! to the system, then use the mobile 13780012345 to call the tracker, it will be connected automatically, and user can monitor the voice around.

Two-way Talking

SMS command: **111111SPK:P1,P2,P3,**

This instruction is used to program the phone number which is used to carry

out two-way talking function.

After setup, the tracker will directly pickup the incoming calling from P1,P2 & P3.

Pressing the button & hold it for 0.5~2 seconds, when the red LED turns on, it will call the 3 phone numbers in turns.

During conversation, press the button again to hand up;

<u>Example</u>: 111111SPK:13922713571,18902267400,

Over-speed Alert

111111SPD:<u>X</u>   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 out warning alert by SMS/platform).

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

111111SPD: to check the setting of over-speed alert.

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. Default speed limitation is 120KM/H. <u>Over-speed alert only works in PWR:0 mode</u>;

Working Mode

The tracker could be set into 4 different working modes.

SMS command: **111111PWR:X**

SMS command	Working mode	Descriptions & Behaviors	current consumption
111111PWR:0	Live tracking mode	GSM & GPS module are always powered up. it will report to platform according to the time interval of "RPT"(moving) & "SLP"(stopped);	30mA
111111PWR:1	Periodical tracking mode	While moving, it reports to platform according to the time interval of "SLP" value; While stopped, it will not report location.	8~20mA
111111PWR:2	Standby mode	Close GPRS connection & power off GPS module, only track by clock settings.	5mA

111111PWR:3 (default)	Deep sleep mode	Power off GSM module & GPS module, long standby time. Only track by clock settings	3~20uA

IMPORTANT: The tracker has no power switch, it is set in deep sleep mode (111111PWR:3) in default. In the deep sleep mode, the tracker will not accept any SMS/GPRS command.

Pressing the button shortly on the panel will wake up the device for 3 minutes, the tracker will response on the SMS command during the wake-up.

PWR:0 could be used for continuously tracking for vehicle/person, PWR:1& PWR:2 is suggested for person tracking, PWR:3 is suggested for asset protection with long standby time.

Settings in Deep Sleep Mode

In deep sleep mode, the device can only be woke up by the following ways:

(1). Shortly press the button, it will wake up for 3 minutes;

(2). Press the button & hold it for 3 seconds, it will trigger the SOS alarm;

(3). Only in arming status, the shock sensor can trigger the vibration alarm;

In deep sleep mode, it only reports to the platform according to the following settings:

There might be time deviation of 2-3 minutes while tracking in this deep mode, depending on the local network situation. When tracking by clock, please set the clock 2-3 minutes in advance.

● Track by clock:

SMS command: **111111CLK:X,C1,C2,C3,......C10,** 　　　(with , at the end).

X is the cycle time, value range: 1~10 (days)

C1,C2,C3,......C10 is the clock, maximum 10 clocks, they should be in sequence.

E.g.: 111111CLK:1,00:15,01:38,05:20,08:10,12:30,14:55,

(Every day, it reports the location to platform according to above clocks)

　　111111CLK:3,18:00,

(Every 3 days, it reports the location to platform at 18:00)

- **Track by time interval:**
  SMS command: **111111CLK:X**
  X=11~65535 minutes　　(If X<=10, it is invalid)
  E.g.: 111111CLK:15 , the device will report the data to platform every 15 minutes.

- **Disable tracking in deep sleep mode;**
  SMS command: **111111CLK:0**
  If X=0,device will not automatically report to platform in deep safe mode by time or time interval;

- **Check the setting:**
  SMS command: **111111CLK:**　　　　　　　(with **:** at the end)

Other SMS Command List

Note: ****** is user's password and the default password is 111111. The tracker will only accept commands with the correct password.

Functions	SMS Command	Example
Set the Shock Sensor	******SHK:X	111111SHK:3
It is to set the sensitivity of the shock sensor.　X=1~255. (X=1,most sensitive; X=255, less sensitive;　default X=2).		
Odometer Setting	******ODO:X	111111ODO:5000
It is to set the initial odometer reading.　(X: meters) 111111ODO:　is to read the present odometer reading (with : at the end)		
Set the Time Zone	******TZN:X	111111TZN:-8.5
It is to adjust the time difference comparing with Greenwich Mean Time, so that the display time in SMS content is the same as your local time. (+: means earlier, - mean later) Example: if your local time is 8hours & 30 minutes earlier than Greenwich Mean Time, then send 111111TZN:-8.5 to adjust it.		
Set Heart-beat time	******HBX:X	111111HBX:3

It is to set the heart-beat time interval. (in minutes)		
Get IMEI number	******CMD:AT+GSN	111111CMD:AT+GSN
Remarks: to get the IMEI number of tracker's GSM module		

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

SMS format:

111111WWW:IPN:X;COM:X;APN:apn,user,password;RPT:X;SLP:X;RUN:X;

- IDN: The tracker's ID, it is the last 14 digits of IMEI which can't be changed.
- IPN: The IP address or domain name of the GPRS server
- COM: The communication port for the GPRS server
- APN: The Access Point Name for the GSM SIM card.
- RPT: The interval for the uploading GPRS packet (Unit: sec.)
- SLP: The interval for uploading GPRS packet when car is parked (Engine is OFF and no vibration). (unit: sec.);
- RUN: GPRS connection setting. 0=close, 1=TCP, 2=UDP.
- IDN: The tracker's ID, it is the last 14 digits of IMEI which can't be changed.

Example, if server is: www.topten-track.com, TCP port is 8500, APN is web.gprs,mtnnigeria.net, apn user:web, apn password: web, time interval is 60 seconds, Then the command is:

111111WWW:IPN:www.51track.com;COM:8500;APN:web.gprs.mtnnigeria.net, web,web;RPT:60;RUN:1;

User can send one or more options at the same SMS commands, such as:
✧ **111111WWW:IPN:X;COM:X;**
This is to set the server's address and port separately.

Example: 111111WWW:IPN:www.51track.com;COM:8500;

✧ **111111WWW:APN:X;**

This is to set the APN (access point name). Please use "," to separate the APN, APN username & APN password.
Example: 111111WWW：APN：web.gprs.mtnnigeria.net,web,web；

✧ **111111WWW:RPT:X;**

This is to set the upload time interval. The unit is second, the minimum value is <u>10</u> seconds. The default setting is 60
Example: 111111WWW：RPT：60；   (Upload time interval is every 60s)

✧ **111111WWW:RUN:X;**

X=0;   is to close down the GPRS;

X=1;   is to open the GPRS via TCP
Eg: 111111WWW：RUN：1； (Open the TCP connection)

✧ **111111WWW:**

You can send 111111WWW: to check the GPRS settings.

Default GPRS Setting

The default GPRS setting is:
✧ IPN: www.topten-track.com ,   COM:8500
✧ APN: cmnet   RPT: 30 seconds
✧ SLP:180   RUN:1

VI. Alarm Types

Vibration Alarm

In arming status, if the car is vibrated, it will send out alarm SMS.
(In PWR:3 mode, please arm it firstly when it wake up)

Low battery Alarm

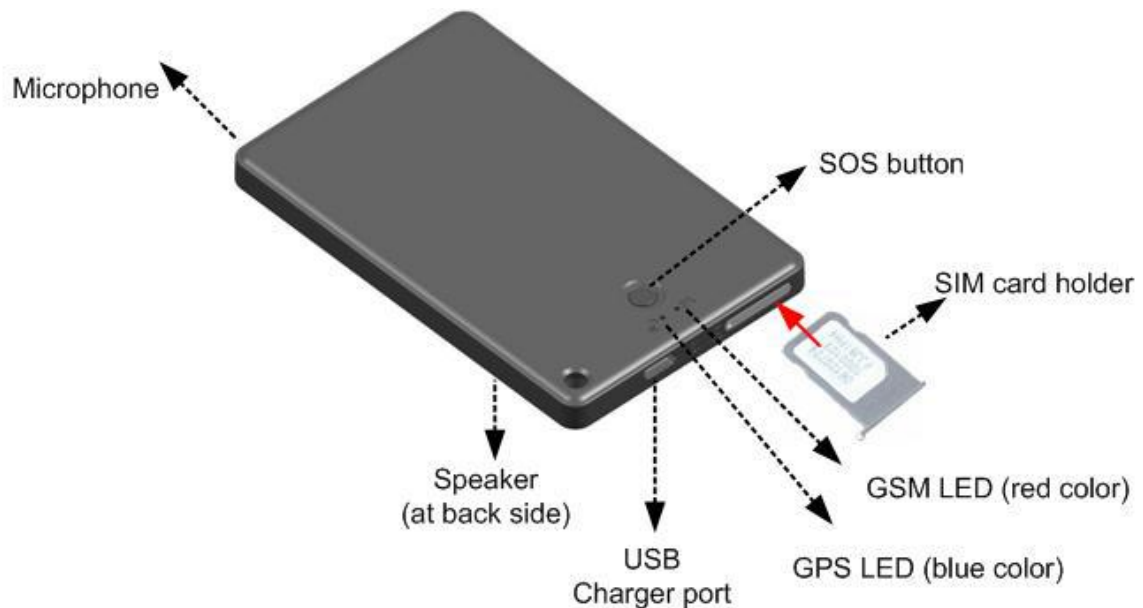If the battery voltage is lower than 3.5V, it will send out low battery alarm.

Over-speed Alarm

If the car runs over the speed limitation continuously for 3 minutes, it will send out alarm (Only available in PWR:0 mode).

SOS Alarm

In any condition, if the SOS button is pressed & hold for 3 seconds, the red & blue LED turn on, it will trigger the SOS alarm.

V. Hardware Usage

Notes:

(1). There is a small hole in the SIM card holder, please use the PIN to press inwards so as to spring out the SIM card holder.

(2). Please pay attention to the direction of the SIM card.

(3). Please use regular android phone charger to charge the device.(output:5VDC,>=1A)

(4). **Power ON:** the device has no power switch. Please insert SIM card slot firstly, then shortly press the button, the device will power up.

(5). **Power OFF:** press the button and hold it at least 9 seconds, the 2 LED lights turns OFF,it will power off.

(5). **Change the SIM:** pleasE dO it according to the following sequence, otherwise it might not work properly.　"Power off the device ——> insert the SIM card ——> power on the device."

LED behavior:

✦ GPS LED(Blue color):

Valid GPS signal　　--------> flash once every 3 seconds.

Invalid GPS signal　--------> Off.

✧ GSM LED(Red color):

Valid GSM signal　　--------> flash once every 3 seconds

Invalid GSM signal　--------> flash slowly.

✧ Receive SMS/GPRS command:

GSM LED turn on for 1 second.

✧ Dial out preset phone:

Press the button & hold for 0.5~2 sec., the red light

✧ Sending out SOS alarm:

Hold the SOS button for 3~7 seconds, both of the LED lights will turn on once, it means the SOS alarm is sent out successfully.

✧ Charging battery:

The 2 LEDs will blink at the same time.

VI . Specifications

Items	Specifications
Working voltage:	+3.4~4.2VDC
Backup battery:	Rechargeable 3.7V 1100mAh Li-ion battery
Dimension (main unit):	87.5*57*6.6 (mm)
Weight　(main unit):	43g
GSM frequency:	**2G**: 850MHz/900MHz/1800MHz/1900MHz (Quad-band)
GPS chipset:	U-blox7 chipset
GPS sensibility	-162dBm
GPS receiving channel	56 channels
Working frequencies	1575.42Mhz C/A(GPS)
Positioning accuracy	≤10m (wide-open area)
Speed accuracy	≤0.1M/S (wide-open area)
Positioning mode	Auto 2D/3D
Hot start	1 sec., average
Warm start	2 sec., average
Cold start	<30sec., average
Working temperature:	-20 ~ 85℃
Humidity:	0 ~ 95%

VII. 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) Please power up correclty; (4) The SIM card is placed correctly in the slot;
I call the tracker, it rings, but it doesn't response with SMS	(1)The user password is wrong, please use the correct password or reset the password to test; (2) Low power, please use outside 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 command is not in correct format;
I can not get the correct GPS coordinates or the location is wrong	(1) Please make sure there is no metal obstacles above the tracker. (2) Please check it at broad place; (3) Please check if the GPS LED flash once every 3 seconds; place the tracker to other place, so as to make sure that it can receive the GPS siganl well (4) In cloudy condition, it is a little hard to get the GPS signal, and the GPS coordinate might have some errors.
Tracker fails to connect to server by GPRS	(1) The SIM card must be activated with GPRS function; (2) Do the correct setting for GPRS connection

VIII. Maintenance

✧ Please use normal android phone charger(output: 1A,5VDC)to charge it.
✧ Please do not put the device in hot & wet place for long time;
✧ Please do not place it together with metal items, it might affect the receiving of GPS signal.
✧ When it is indoors or nearby a tall building, the GPS signal might be weak or completely disable.
✧ Please check the balance of the tracker's SIM card periodically.
✧ The battery is replaceable, please use screwdriver to open the back panel carefully.

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.
Warning: 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.

FCC Radiation 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.