



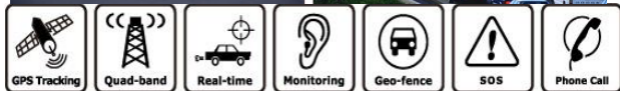
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## GPS VEHICLE TRACKER VT108 User Manual

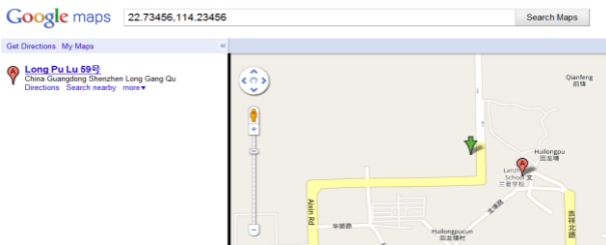


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## 1. Introduction

Working Based on existing GSM /GPRS network and GPS satellites, this vehicle tracking solution is a professional system that consists of high sensitive and reliable car GPS trackers and server tracking software. Not only transmit the longitude and latitude coordinates to your cell phone by SMS. But also transmit the coordinate, vehicle status and alarm information to the designated server by GPRS. By this you can know where the vehicle is, where had it been to, what the status it is. You can also stop the vehicle by cutting off the circuit and fuel. What's more, it supports handsfree phone call between the driver and call center. This solution can be widely used in the vehicle tracking, valuable assets monitoring, fleet management area.



GPS antenna



Device



GSM antenna



Cables and buttons



Microphone



Speaker

## 2. What's new?

- With loud speaker for handsfree phone call between driver and call center. This function is very useful for taxi, rental vehicle, ambulance and police car.
- Easy to install, with built-in relay, for stopping gas/power supply remotely, installation-free.
- With an external SIM card slot, user friendly, without open the case.
- With external microphone for wire-tapping with no extra charge.
- With built-in relay.
- Supports ACC detective, in or out Geo-fence alarm.

## 3. Main Features

Tracker	Firmware
Real-time locating and tracking on web	Server based
History replay	Based on Google map/Google earth
Handsfree phone call with call center	Supports multi-users
Listen in function (wire-tapping)	Supports more than 1000 trackers
Door detective	Real-time tracking
ACC detective	Set the tracking interval
SOS alarm	History replay
Go in or go out Geo-fence alarm	SOS alarm
Speeding alarm	Speeding alarm
Power-lost alarm	GEO fence alarm
Cut off the circuit or fuel	Power-lost alarm
Customizations are welcome	Customizations are welcome

## 4. Applications

Rental vehicle monitoring and management

Taxi/ ambulance/police car dispatch management

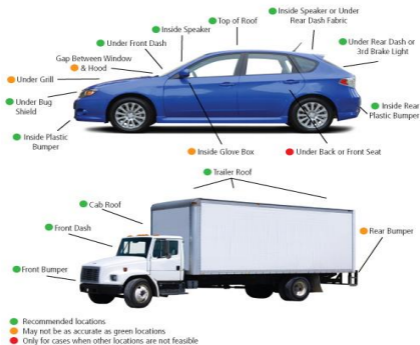
Fleet management

## 5. Specification

Content	Specs.
Dimension	96mm x 64mm x 25mm
Weight	150g
Network	GSM/GPRS
Band	900/1800/1900Mhz or 850/900/1800/1900Mhz
GPS chip	SIRF3 chip
GPS sensitivity	-159dBm
Input Voltage	9-36V DC
Cold start	42 sec.
Warm starts	38 sec.
Hot start	1 sec.
Battery	Chargeable 3.7V 870mAh battery
Operation temperature	-40 °C to +75 °C
Humidity	5%--95% non-condensing

## 6. Installation

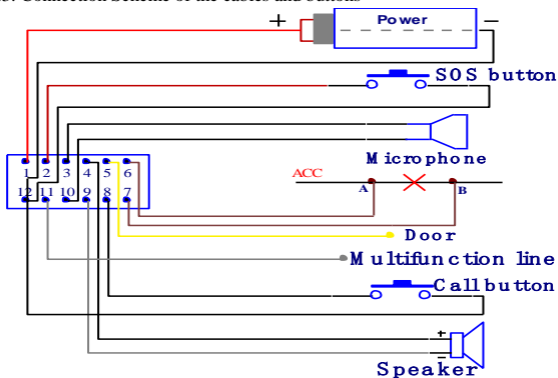
### 6.1 Recommend placement for GPS antenna



## 6.2. Connect the GSM antenna and GPS antenna



## 6.3. Connection Scheme of the cables and buttons



## 6.4. Insert the SIM card



6.5. After inserting the SIM card into the tracker, it will be switched on automatically. GSM LED and GPS LED will be bright at the same time. That means tracker is starting, GSM LED starts to blink if tracker got GSM signal. The GSP LED starts to blink if got GPS signal.

## 7. SMS Command Explanations in Details

### 7.1 Set the authorized numbers

There are 3 SOS numbers and 1 call center number can be set. If SOS button is pressed for 3 seconds, The SOS alarm will be sent to 3 SOS numbers by SMS and sent to server by GPRS. If call button was pressed for 3 seconds, it will make a call to the call center. The tracker will pick up the incoming call automatically, then, call center can talk with the driver.

It doesn't mean all of the authorized numbers should be set, but set one at least. Tracker will accept the SMS commands from the authorized numbers only. So please set the authorized phone number before you send other commands. 123456 is the default password of the tracker and we will take 123456 as the password to explain all the commands in this document.

Send SMS“123456A1,phone number” to set the first SOS number.

Send SMS“123456A2,phone number” to set the second SOS number.

Send SMS“123456A3,phone number” to set the third SOS number.

Send SMS“123456A4,phone number” to set the call center number.

Note: 123456 is the default password. A must be in English capital letter and make sure there is no space in the command. Phone number must include the country code

E.g. send SMS “123456A1,+8613812345678” to set +8613812345678 as the first SOS number. +86 is the country code of China. Please do not use 00 instead of “+”.

### 7.2. Delete authorized numbers

Send SMS“123456A1,D” to delete the first SOS number.

Send SMS“123456A2,D” to delete the second SOS number.

Send SMS“123456A3,D” to delete the third SOS number.

Send SMS“123456A4,D” to delete the call center number.

### 7.3. Get position & Google URL link by sending SMS command

7.3.1. You can use the cell phone to call the SIM number that in the tracker for 3 seconds, then hang up the call before the tracker hangs up or before tracker get it through. Tracker will reply a position SMS with latitude and longitude in it. You can put the coordinate into Google map and search for the position. Tracker will not reply the SMS If you did not hang up the call quickly.

Tracker will reply position SMS to any incoming call number if you haven't set the authorized numbers yet. Once you have set the authorized number, tracker will reply SMS position to the authorized numbers only.

7.3.2. Send SMS "123456F" to the tracker by authorized number, it will reply a position SMS with Google URL link. Only the authorized number can get the reply.

### 7.4. Continuous tracking function

Send SMS "**123456M0/M1,xxxS/M/H**" to the unit, the tracker will reply the position message according to the time interval. If the device did not connect to the server, the message will reply to A1 number or it will reply to server.

**Note: M must be In English capital letter.**

M0 means turn off, M1 means turn on

xxx means time interval and must be in three digits,030S means 30S.

S means second, M means minute, H means hour

H should be  $\leq 90$ , S,M should be  $< 255$

The minimum time interval is 20 seconds

E.g. send "**123456M1,030S**" to the tracker, then tracker would auto send GPS coordinates to the A1 number every 30 seconds. Send "**123456M0,030S**" to the tracker means stop the continuous tracking.

### 7.5. SOS function

It will send "**help me! + GPS coordinates**" to A1, A2 and A3 all three authorized numbers if the SOS button was pressed for 3 seconds. In the meantime, it will dial the 3 authorized numbers (A1, A2, A3).The first preset number will take



priority over the second one and the third one. If tracker fails to connect to the first number, it will switch to the second one, In case the second number fail to be connected either, it will connect to the third number, This will go on and on until one of the telephone pick up, then two ways communication starts.

## 7.6. Dial the Call Center number

Press SOS button for 3 seconds, the tracker will dial the call center number, as long as call center number is ready.

## 7.7. Speeding alert

Sent SMS “**123456J0/J1,speed**” to set the Speeding alert function.

Note: J must be in English capital letter.

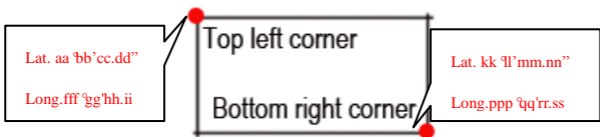
J0 means turn off the over speed alert function. J1 means turn on the over speed alert function. Speed should be <250 (Km/h) and must be in 3 digits, e.g. 080= 80 km/h.

For example, send “**123456J1,080**” to tracker. When the object moves exceeds 80km/h, the unit will send SMS as “Over speed! +GPS coordinates” to the A1,A2 and A3. Send “**123456J0,080**” to tracker to turn off the speeding alert function.

## 7.8. GEO-Fence

Send SMS “**123456Ixyz,aabbccddefffgghhijjkkllmmnnppppqrrssj**” to set up the geo-fence for the device to restrict its movement within a district. The device will send the message to the A1, A2 and A3 as “Stockade +geo info” when it breaches the district.

5 GEO-Fence can be set for the tracker.



Note: I must be in English capital letter.

x=NO. of the Geo-fence(1-5)

y=1 means turn on, y=0 means turn off

z=0 means go into, z=1 means go out

**aabbccdd = top left corner Latitude**

e=N means north latitude, e=S means south latitude

**fffghhii = top left corner Longitude**

j=E means east longitude, j=W means west longitude

**kkllmmnn = bottom right corner Latitude**

e=N means north latitude, e=S means south latitude

**pppqqrrss = bottom right corner Longitude**

j=E means east longitude, j=W means west longitude

Note:

aa,bb,cc,dd,kk,ll,mm,nn,qq,rr,ss must be in 2 digits.

03 means 3.

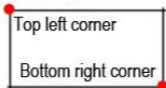
fff,ppp must be in 3 digits.

011 means 11.

E.g. The first Lat.51 9'35.25"N, Long.9 9'2'56.70"E

The second Lat.50 24'11.15"N, Long.:11 01'11.73"E

Lat. 51°11'35.25"N  
Long. 9°12'56.70"E



Lat. 50°24'11.15"N  
Long. 11°01'11.73"E

So the SMS command should be

**"123456II,1,1,51113525N009125670E50241115N011011173E"**

to turn on Geo-fence function for 1<sup>st</sup> Geo-fence, once tracker go out of the range, authorized phone number will get alert from tracker.

## 7.9. Low battery alert

Send SMS “**123456(N 0/N1),xx**” to set the low-battery alert.

E.g. send“**123456N1,30**” to the tracker means when the battery power is lower than 30%, it will send an alert to the authorized number. Send“**123456N0,30**” to the tracker to turn off the low battery alert function.

Note:

7.9.1 N must be in English capital letter.

7.9.2 N0 means turn off the low-battery alert function.

7.9.3 N1 means turn on the low-battery alert function.

7.9.4 xx should be <45 and must be in 2 digits, at unit of %.

## 7.10. Set the local time zone

Send SMS “**123456L,time zone**” to set the local time zone.

Note: L must be in English capital letter, + in the time zone means east,- in the time zone means west. Time zone must be in 2 digits. So Beijing time zone should be like this: +08

E.g. send “**123456L+08**” to set the time zone as Beijing time.

## 7.11. Modify the password

Send SMS “**123456H\*\*\*\*\***” to change the password.

Note: “\*\*\*\*\*” is the New password. H must be in English capital letter, send it to tracker to modify the password. (Default password: 123456)

E.g. send “**123456H456789**” to change the password from 123456 to 456789.

The password won't be erased by changing SIM card.

Be sure keeping new password in mind, otherwise you have to update the software to restore the original setting in case of losing the password.

The password must be 6 digits, or tracker can't recognize the password.

## 7.12. Switch to listen in or talk mode

Send SMS “123456U1” to switch to the listen in mode

Send SMS “123456U0” to switch to the talk mode

The default mode is talk mode, in this mode tracker will auto pick up the

incoming call then the call center can talk to the driver.

In the listen in mode, the tracker will auto pick up the incoming call then the call center can hear the sound around the car, but the driver can't hear from the call center.

### 7.13. Auto Enter Into Sleeping mode

7.13.1 When car stop for 10 minutes, tracker would auto enter into sleeping mode, and send back GPRS data packet with real-time GPS coordinates to server every 3 minutes. Stop sleeping mode and shift to normal mode once car moves.

7.13.2. If there is no GPS signal after 10 minutes, tracker would auto enter into sleeping mode, and send back GPRS data packet with last time GPS coordinates to server every 3 minutes. Stop sleeping mode and shift to normal mode once car moves.

### 7.14. GPRS setting (based on a fixed platform)

7.14.1. Make sure the GPRS function of the SIM CARD is opened.

7.14.2. Get APN from your cellular carrier (GPRS access point name).

7.14.3. Send the device 123456B to get IMEI number and make sure this IMEI number has been registered on your platform.

7.14.4. Set the APN, IP & PORT

Send SMS "123456CAPN Name,IP:Port" to set the APN, IP and port. IP and port is about the server you use.

**Note:** Make sure that the IP should be the public IP. If your PC is available with internet, you can easily checkout the public IP.

E.g. send SMS"123456CCMNET,119.122.101.91:7289". CMNET is the APN of China Mobile (please set the APN of the cellular company you use). 119.122.101.91:7289 is the IP address & PORT of our own server.

7.14.5 Set APN User Name and APN Password

Send SMS "**123456OAPN User Name,APN Password**" to set the APN username

and password for GPRS.

Note:

1. O must be in English capital letter.
2. This setting depends on different providers. If the provider doesn't need username and password for the GPRS, you do not need to send this command.

7.14.6. Send command "123456D" to open GPRS

7.14.7 Send command "123456E" to close GPRS

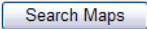
Recommend using the GPRS, it is more convenient to monitor your people or fleet.

## 7.15. Displaying location on Google map

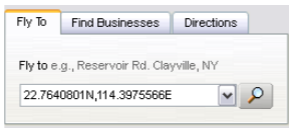
7.15.1 Go to <http://maps.google.com> and type in the latitude and longitude like this: **22.7640801N,114.3975566E**



Click search button, then you can see the position.

A rectangular button with rounded corners and a light blue gradient. The text "Search Maps" is centered in a dark blue font.

7.15.2 Download Google earth software from <http://earth.google.com/> and install it in to your computer. Start the Google Earth software and type the latitude and longitude into the software like this: **22.7640801N,114. 3975566E**. Click search. Then you can see the position.



## 7.16. Displaying location on your cell phone

Send SMS “**123456F**” to tracker, it will reply a SMS with Google URL link and GPS coordinates like:

<http://maps.google.com/maps?f=q&hl=en&q=22.73456,114.23456>

Click the RUL then you can see the location



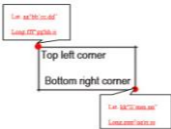

## 7.17. Tracking in the PC or Web-tracking software

The device can be tracked in your tracking software platform, we shall provide you the protocol accordingly. We highly recommend our clients to use VT108 based on your own web-tracking software, since it's a complicated AVL with comprehensive functions, of which SMS or Google Earth can't implement all.

## 8. All of the SMS commands list

➤ name	➤ Sentence content	➤ Description
➤ Set authorized numbers	➤ <b>123456A1,phone number</b> ➤ <b>123456A2,phone number</b> ➤ <b>123456A3,phone number</b> ➤ <b>123456A4,phone number</b>	➤ A1,A2,A3 is for setting the 3 SOS numbers. ➤ A4 is for the call center number. Phone number must include the country code like +8613812345678. +86 is the country code of China. Please do not use 00 instead of "+".
➤ Sample of setting authorized numbers	➤ 123456A1,+8613812345678	➤ Set +8613812345678 as the first SOS number.

➤ Delete authorized numbers	➤ <b>123456A1,D</b> ➤ <b>123456A2,D</b> ➤ <b>123456A3,D</b> ➤ <b>123456A4,D</b>	➤ A1,A2,A3 is for setting the 3 SOS numbers. ➤ A4 is for the call center number
➤ Switch to the listen in mode	➤ <b>123456U1 (Default)</b>	➤ Tracker will pick up the incoming call automatically, so that call center can hear what happen around the car.
➤ Switch to the talk mode	➤ <b>123456U0</b> <b>(No vibration hint)</b>	➤ Tracker will pick up the incoming call to talk to the caller.
➤ Get position by SMS	➤ <b>123456F</b>	➤ It will reply the GPS coordinates and the Google URL link via SMS to the cell phone.
➤ Set continuous tracking	➤ <b>123456Mx,yyyz</b>	➤ x=1 means on, x=0 means off ➤ yyy means time interval. If z=S/M it should be <=255.if z=H, it should be<=090. It must be in 3 digits. 030Smeans 30S ➤ Z means time unit, z=S means second, z=M means minute, z=H means hour ➤ The minimum time interval is 20 seconds
➤ Sample of Setting continuous tracking	➤ 123456M1,030S	Tracker will reply the position according to the time interval you set (30 seconds). If tracker has connected to server it will send to the server by GPRS or it will be sent to the cell phone by SMS.
➤ Set the speeding alarm	➤ <b>123456Jx,yyy</b>	➤ x=1 means on, x=0 means off ➤ yyy means the alarm speed, it should be<250 and must three digital, e.g. 080=80km/h.
➤ Sample of setting speeding alarm	➤ 123456J1,080	➤ The tracker will send a speeding alarm to server if it is over the 80km/h
➤ Set GEO fence	<b>123456Ix,y,z,</b>	➤ x=NO. of the GEO-fence(1-5),5 GEO

	<p>aabbccddeffgghhijjkkllm mnnppppqrrssj</p> 	<p>fence can be set</p> <ul style="list-style-type: none"> <li>➤ y=1 means on, y=0 means off</li> <li>➤ z=0 means go in, z=1 means go out</li> <li>➤ e=N means the north latitude, e=S means the south latitude</li> <li>➤ j=E means the east longitude, j=W means the west longitude</li> <li>➤ aa,bb,cc,dd,kk,ll,mm,nn,qq,rr,ss must be in 2 digits.03 means 3.</li> <li>➤ fff,ppp must be 3 numbers.011 means 11</li> </ul>
<ul style="list-style-type: none"> <li>➤ Example of setting GEO fence</li> </ul>	<p>123456I1,1,1,511135 25N009125670E 50241115N011011173E Lat. 51°11'35.25"N Long. 9°12'56.70"E</p> 	<ul style="list-style-type: none"> <li>➤ Tracker will send an alarm data if it goes out the district you set</li> </ul>
<ul style="list-style-type: none"> <li>➤ Set the time zone</li> </ul>	<ul style="list-style-type: none"> <li>➤ <b>123456Lxyy</b></li> </ul>	<ul style="list-style-type: none"> <li>➤ x=+ means east x=- means west</li> <li>➤ yy means the time zone, must be in 2 digits.</li> </ul>
<ul style="list-style-type: none"> <li>➤ Sample of setting the time zone</li> </ul>	<ul style="list-style-type: none"> <li>➤ 123456L+08</li> </ul>	<ul style="list-style-type: none"> <li>➤ Set the +08 time zone</li> </ul>
<ul style="list-style-type: none"> <li>➤ Set the low battery alarm</li> </ul>	<ul style="list-style-type: none"> <li>➤ <b>123456Nx,yy</b></li> </ul>	<ul style="list-style-type: none"> <li>➤ x=1 means on, x=0 means off</li> <li>➤ yy means battery power percentage is lower than yy%, then send the alert. It must be &lt;45 &amp; in 2 digits.</li> </ul>
<ul style="list-style-type: none"> <li>➤ Sample of setting the low battery alarm</li> </ul>	<ul style="list-style-type: none"> <li>➤ 123456N1,40</li> </ul>	<ul style="list-style-type: none"> <li>➤ Tracker will send a low battery alert if the power is lower than 40%.</li> </ul>
<ul style="list-style-type: none"> <li>➤ Modify the password</li> </ul>	<ul style="list-style-type: none"> <li>➤ <b>123456H456789</b></li> </ul>	<ul style="list-style-type: none"> <li>➤ 456789 is the new password, new password must be in 6 digits.</li> </ul>
<ul style="list-style-type: none"> <li>➤ cut off the ACC or fuel</li> </ul>	<ul style="list-style-type: none"> <li>➤ <b>123456T1</b></li> </ul>	<ul style="list-style-type: none"> <li>➤ Car can't be started</li> </ul>



➤ recover ACC or fuel	➤ <b>123456T0</b>	➤ Recover ACC function, car can be started.
➤ Set the APN,IP and port	➤ <b>123456CAPN Name,IP:Port</b>	➤ you can get the APN from your local GSM provider.
➤ Sample of setting the APN	➤ 123456CCMNET, 119.122.101.91:7289	CMNET is the APN of China mobile. 119.122.101.91 is an example IP address, 7289 is the port.
➤ Set the username and password for APN	➤ <b>123456OAPN User Name, APN Password</b>	➤ If the SIM card doesn't need APN username and password, you do not need to set it.
➤ Example of setting the username and password for APN	➤ 123456Ointernet,internet 123	➤ The APN user name is "internet" and the password is "internet123".
➤ Open ➤ GPRS	➤ <b>123456D</b>	➤ Tracker will start to connect the server by GPRS. It will send back an SMS to confirm after it has connected to server successfully.
➤ Close GPRS	➤ <b>123456E</b>	➤ The tracker will close the connection with the server.
➤ Get the IMEI number	➤ <b>123456B</b>	➤ It will reply the IMEI number of the tracker.
➤ Reset all the data	➤ <b>RESET!</b>	➤ To delete all the commands you've set before, resume to factory setup.

## 9. Cautions

Please comply with the instructions to extend the unit life:

1. Keep the unit dry. Any liquid, i.e. rain, moisture, may destroy or damage the inside circuitry.
2. Don't use & store the unit in dusty places.
3. Don't put the unit in overheated or overcooled places.
4. Handle carefully. Don't vibrate or shake it violently.
5. Clear the unit with a piece of dry cloth. Don't clean in chemicals, detergent.
6. Don't paint the unit, this may cause some foreign materials left in between the parts.
7. Don't disassemble or refit the unit.
8. Please use the battery and charger provided by manufacturer. Using other batteries and chargers will cause unwanted situation.
9. Don't dismount the antenna randomly, or use other antennas. This may interfere the transmission, and increase the radiation as well.