TL201 PERSONAL GPS TRACKING SOLUTION

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1. Introduction

Working Based on existing GSM /GPRS network and GPS satellites, this tracker is a small and powerful tracking device that is developed for personal, vehicle and pet etc. Not only transmit the longitude and latitude coordinate to your cell phone by SMS, but also transmitting the longitude and latitude coordinate to the designated server by GPRS and then displaying the location by tracking software.

Server database

Client tracking software

Amazing tracking unit

2. What's new?

➢   Mini size: As small as a car remote controller can be link to the key chain.

➢   Excellent design: Especially design for personal using.

➢   Phone call function: It can make a phone call by pressing the button.

➢   Get position by 3 ways: Search the coordinate in Google map, click the URL and see the position in cell phone directly and view the position and history in tracking software.

3. Main Features

◆   Locating and tracking via SMS or GPRS

◆   Support voice call

◆   Listen in function

◆ SOS alert
◆ Geo-fence alarm
◆ Speeding alert
◆ Low battery alert

4. Applications
◆ Protect the child/elderly/disabled/pet etc.
◆ Personnel management
◆ Track the vehicle/ equipment etc.
◆ Provide peace-of-mind for businessmen

5. Specification

Content	Specs.
Dimension	70.7mm x 42.9mm x 20.1mm
Weight	40g
Network	GSM/GPRS
Band	900/1800Mhz 900/1800/1900Mhz 850/900/1800/1900Mhz
GPS chip	SIRF3 chip
GPS sensitivity	-159dBm
GPS accuracy	5-20m
Cold start	42 sec.
Warm starts	38 sec.
Hot start	1 sec.
Battery	Chargeable 3.7V 870mAh battery
Operation temperature	-20°C to +55°C
Humidity	5%--95% non-condensing

6. Start up
Do charge the battery to capacity in 8 -12 hours for first use. After the first use, the battery can be charged fully in 3-5hours. In order to protect the device please use the battery and charger provided by the manufacturer.
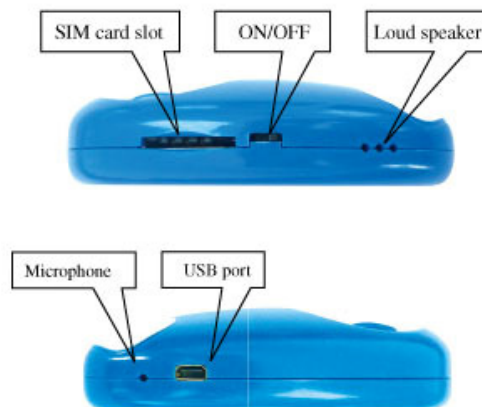
Insert the SIM card into the tracker like this.
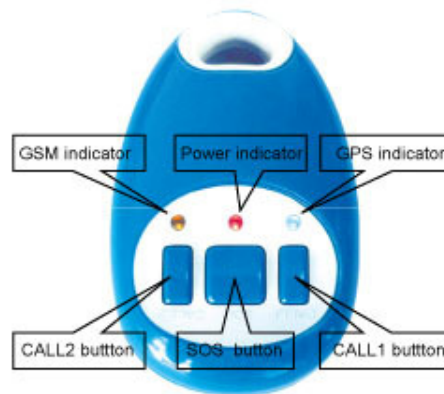
Switch on the unit outdoors. Three LEDs will be bright at the same time during the tracker starting. In 10 to 30seconds, the unit will begin to work and indicators will blink as the following:

Three LED	Bright at the same time	The device is starting
Orange	Blink like ‿⋀‿‿‿⋀‿‿‿⋀	Work in GSM mode
Orange	Blink like ∿∿∿∿∿∿	Connecting GPRS
Orange	Blink like ⋀‿‿⋀‿‿⋀	Had connected to GPRS
Red LED (power)	Blink like ⋀⋀⋀⋀⋀⋀⋀⋀⋀	Power on
Blue LED (GPS)	Blink like ⋀‿‿⋀‿‿⋀	Had got GPS signal

7. Get the position by calling the tracker

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 receives it. The 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. The tracker will not reply the SMS If you did not hang up the call before the tracker hangs up or receives it.

The tracker will reply to any incoming call number if you do not set the authorized numbers yet. Once you had set the authorized number, the tracker will reply SMS to the authorized numbers only.

8. Set the authorized number.

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 CALL1 number.

Send SMS"**123456A5, phone number**" to set the CALL2 number.

Note: 123456 is the default password. A must be English in capital 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 +.

It doesn't means that all of the five authorized numbers should be set, but at least set one authorized number. The device will only accept the all of the SMS commands from the authorized numbers only.

9. Delete authorized number.

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 CALL1 number.

Send SMS"**123456A5,D**" to delete the CALL2 number.

E.g. send "**123456A1,D**" to delete the first SOS number.

10. Get position by sending SMS command.

Send SMS "**123456F**" to the device and it will reply its position by SMS. Only the authorized number can get the reply.

Note: F must be English in capital.

E.g. send "**123456F**" to the unit. It will reply its position.

11. 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 English In capital.

M0 means turn off, M1 means turn on

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

S means second, M means minute, H means hour

H should be≤90, S,M should be <255

E.g. send"123456M1,030S" to the tracker means every 30 seconds send back a position coordinate to the A1 number. Send"123456M0,030S" to the tracker means stop the continuous tracking.

12. SOS function

It will send "help me! + GPS info" to A1, A2, A3 authorized numbers if the SOS button was pressed for 3 seconds. In the mean time, 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 the tracker fails to connect to the first number, it will switch to the second one, In case the second number fail to be connected too, the system will connect to the third number, This will go on and on until one of the telephone pick up, then two ways communication starts.

13. Dial the preset phone number by Call 1 or Call 2.

Press CALL1 button for 3 seconds, the tracker will dial the CALL1 number. Press CALL2 button for 3 seconds, the tracker will dial the CALL2 number.

14. Listen in function

If authorized numbers calls the tracker and wait to the tracker pick it up thel. You can hear the sounds around the tracker.

15. Speeding alert

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

Note: J must be English in capital.

J0 means turn off the over speed alert function; J1 means turn on the speeding alert function.

speed should be<250 and must 3 numbers, e.g. 080= 80 km/h.

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

16. GEO-FENCE

Send SMS "**123456lxyz,aabbccddefffgghhiijkkllmmnnepppqqrrssj**" 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, A3 numbers as "Stockade +geo info" when it breaches the district.

5 GEO-FENCES can be set for the tracker.

Note: I must be English in capital.

x=NO. of the GENFENCE(1-5)

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

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

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

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

aa,bb,cc,dd,kk,ll,mm,nn,qq,rr,ss must be 2 numbers.03 means 3.

fff,ppp must be 3 numbers.011 means 11.

E.g. The first Lat.51°11'35.25"N, Long.9°12'56.70"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

Top left corner

Bottom right corner

Lat. 50°24'11.15"N
Long. 11°01'11.73"E
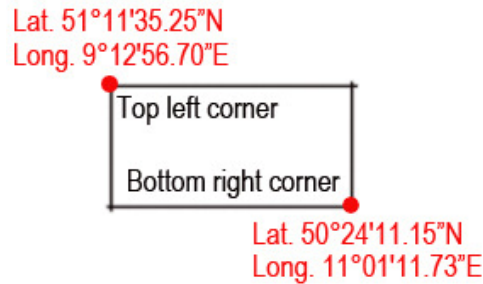
So the SMS command should be
"123456I1,1,1,51113525N009125670E50241115N011011173E"

17. Low battery alert

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

Note: N must be English in capital, N0 means turn off the low-battery alert function; N1 means turn on the low-battery alert function. xx should be <45 and must be 2 numbers.

E.g. send "123456N1,30" to the tracker means when the battery is lower then 30%,it will send a alert to the authorized number. Send "123456N0,30" to the tracker means turn off the low battery alert function.

18. Set the local time

Send SMS "**123456L,time zone**" to set the local time

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

E.g. send "123456L+08" to set the time to the Beijing time.

19. Modify the password

Send SMS "**123456H********" to change the password.

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

E.g. send "123456H456789" means change the password 123456 to 456789

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

Be sure keep the 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 numbers, If not the tracker can not recognize the password.

20. GPRS setting

In order to use GPRS function, the user needs to set IP, Port and APN (access point name) by sending SMS commands. Make sure that your SIM card in the tracker supports the GPRS function.

Send SMS "**123456C$$$$,IP:Port**" to set the APN, IP and port.

Note: C must be English in Capital. Please get APN from your local GSM operators and pay attention to the lower case or upper case of those letters.

E.g. send SMS "123456CCMNET, 119.122.101.91:7289".CMNET is the APN in China, please set the APN in your country.

Send SMS "123456O&&&&, @@@@" to set the username and password for GPRS.

Send SMS "123456D" to turn on GPRS
Note: D must be English in capital.
E.g. send SMS "123456D"

Send SMS "123456E" to turn off GPRS
Note: E must be English in capital.
E.g. send SMS "123456E"

Send SMS "123456B" to get the IMEI number of the unit.
Note: B must be English in capital.
E.g. send SMS "123456B"

21. Displaying location on Google map
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.
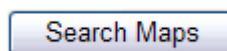
Download Google earth software from http://earth.google.com/ and install it in to your computer.
Start the Google Earth software and type the latitude and longitude into the software like this: 22.7640801N,114.3975566E. Click search. Then you can see the position.

22.Displaying location on your cell phone
It will reply a URL within the location SMS like:
http://grpsgprs.vip.dns12580.com/?227640783/114.3976533
Click the RUL then you can see the location

23. Tracking in the PC software

The device can be tracked in our tracking software, please contact us for more information.

24. 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.

TL201/TL108 GPS Tracker GPRS Protocol (Version 4.0)

Data format from software to tracker
:23456Command,Data#

:	Header
123456	Password, the default password is 123456
Command	"A1" Set authorized numbers "A2" Set authorized numbers "A3" Set authorized numbers "A4" Set authorized numbers "A5" Set authorized numbers "F" Locate one time "M" Set continuous tracking "J" Set the Speeding alarm "I" Set GEO fence "L" Set the time zone "N" Set low battery alarm "H" Modify the password "T1" Cut off the ACC or fuel(Open the relay),only available for TL108 "T0" recover ACC or fuel(Close the relay), only available for TL108 "U1" Switch to the listen in mode, only available for TL108 "U0" Switch to the talk mode, only available for TL108 "C" Set the APN,IP&Port "O" Set the user name and password for APN
Data	It depends on the command, and it will be null in some commands
#	Ending

Example
:123456H456789#

Details of all the sentences from software to tracker. The default password is 123456.

Name	Sentence content	Description
Set authorized numbers	**:123456A1,phone number#** **:123456A2,phone number#** **:123456A3,phone number#** **:123456A4,phone number#** **:123456A5,phone number#**	For TL201: A1,A2,A3 is for setting the 3 SOS numbers.A4 is for CALL1 number.A5 is for CALL 2 number. For TL108: 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	**:123456A1,D#** **:123456A2,D#** **:123456A3,D#** **:123456A4,D#** **:123456A5,D#**	For TL201: A1,A2,A3 is for setting the 3 SOS numbers.A4 is for CALL1 number.A5 is for CALL 2 number. For TL108: A1,A2,A3 is for setting the 3 SOS numbers.A4 is for the call center number
Locate one time	**:123456F#**	The tracker will reply the position for one time
Set continuous tracking	**:123456Mx,yyyz#**	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 three numbers,030Smeans 30S Z means time unit，z=S means second, z=M means minute, z=H means hour
Sample of Setting continuous tracking	:123456M1,030S#	The tracker will reply the position according to the time interval you set.
Set the speeding alarm	:123456Jx,yyy#	x=1 neans 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	:123456Ix,y,z, aabbccddefffgghhiijkkllmmnnepppqqrrssj# Lat. aa°bb'cc.dd" Long. fff°gg'ff.ii" Top left corner Bottom right corner Lat. kk°ll'mm.nn" Long. ppp°qq'rr.ss"	x=NO. of the GEO-fence(1-5),5 GEO fence can be set y=1 means on, y=0 means off z=0 means go in, z=1 means go out e=N means the north latitude, e=S means the south latitude j=E means the east longitude, j=W means the west longitude aa,bb,cc,dd,kk,ll,mm,nn,qq,rr,ss must be 2 numbers.03 means 3. fff,ppp must be 3 numbers.011 means 11
Example of setting GEO fence	:123456I1,1,1,51113525N009125670E50241115N011011173E# Lat. 51°11'35.25"N Long. 9°12'56.70"E Top left corner Bottom right corner Lat. 50°24'11.15"N Long. 11°01'11.73"E	The tracker will send an alarm data when it in/out the district.
Set the time zone	:123456Lxyy#	x=+ means east x=- means west yy means the time zone，must be 2 numbers
Sample of setting the time zone	:123456L+08#	Set the +08 time zone
Set the low battery alarm	:123456Nx,yy#	x=1 means on,x=0 means off yy means battery lower then yy% then send the alarm.It must be<45.it must be 2 numbers.
Sample of setting the low battery alarm	:123456N1,40#	The tracker will send a low battery alarm if the battery is lower then 40%
Modify the password	:123456H456789#	456789 is the new password, new password must be 6

		numbers
cut off the ACC or fuel	**:123456T1#**	The car can not started, only available for TL108
recover ACC or fuel	**:123456T0#**	The car can be started, only available for TL108
Switch to the listen in mode	**:123456U1#**	The tracker will pick up the incoming call then the call center can talk to the driver.
Switch to the talk mode	**:123456U0#**	The tracker will pick up the incoming call then the call center can hear the sound around the car.
Set the APN,IP and port	**:123456C$$$$,IP:Port#**	$$$$ is the APN, 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.
Set the username and password for APN	**:123456O&&&&, @@@@#**	&&&& is the username and @@@@ is the password. If the SIM card did not need username and password for the APN, you do not need to set it.
Sample of setting the username and password for APN	**:123456Ointernet,internet123#**	The user name is internet and the password is internet123.

Data format from tracker to software
#IMEI, Type, A/V, Date, Time, Latitude, Longitude, Speed, Status, Others#

#	Header
IMEI	The IMEI of the tracker, it can be used as the tracker ID
Type	"CMD-A1" reply for A1 command, set the authorized number. "CMD-A2" reply for A2 command, set the authorized number. "CMD-A3" reply for A3 command, set the authorized number. "CMD-A4" reply for A4 command, set the authorized number. "CMD-A5" reply for A5 command, set the authorized number. "CMD-F" reply for F command, Locate one time "CMD-T" continuous tracking "CMD-J" reply for J command, Set speeding alarm "CMD-I" reply for I command, Set GEO fence "CMD-L " reply for L command, Set the time zone "CMD-N" reply for N command, Set low battery alarm "CMD-H" reply for H command, Modify the password "CMD-T1" reply for T1 command, Recover ACC or engine "CMD-T0" reply for T0 command, Cut the ACC or engine "CMD-U1" reply for U1 command, Switch to the listen in mode "CMD-U0" reply for U0 command, Switch to the talk mode "CMD-C" reply for C command, Set the APN,IP and port "CMD-O" reply for O command, Set the username and password for the APN. "CMD-X" Heartbeat data, it will send this data to keep the connection with the server if no data communicate between the tracker and server for a long time. "ALM-A" SOS alarm "ALM-B" GEO alarm "ALM-C" Speeding alarm "ALM-D" Low-battery alarm "ERROR!" Setting unsuccessful, means you did you send the sentences in the correct format
A/V	A=GPS had Fixed V=GPS not fixed
Date	Date of GPS fix, in the format of YYMMDD. It will be UTC if you did not set the time zone. It

	can be null if GPS not fix.
Time	Time of GPS fix, in the format of HHMMSS. It will be UTC if you did not set the time zone. It can be null if GPS not fix.
Latitude	The format is dd.ddddddddN/S. It can be null if GPS not fix.
Longitude	The format is ddd.ddddddddE/W. It can be null if GPS not fix.
Speed	Speed in km/h. It can be null if GPS not fix.
Status	For TL201: In the format of XX-YY.XX means the battery, the top is 100.YY means the GSM signal, the top is 31. For TL108: In the format of A-B-C-XX-YY.A=1 means ACC on, A=0 means ACC off. B=1 means tracker get power for the car battery, B=0 means tracker lose power from car battery. C=1 means door open, C=0 means door close. XX means the battery, the top is 100.YY means the GSM signal, the top is 31.
Others	It is null at present
#	Ending

Example for TL201
#353327020115804,CMD-T,A,DATE:090329,TIME:223252,LAT:22.7634066N,LOT:114.3964783E,Speed:000.0,84-20,#

Example for TL108
#353327020115804,CMD-T,A,DATE:090329,TIME:223252,LAT:22.7634066N,LOT:114.3964783E,Speed:000.0,1-1-0-84-20,#