TZ-GT01 Personal Tracker
(GPS+SMS+GPRS)

User Guide

Version 3.9

TZ-GT01 User Guide
Version:3.9

Content

1 Introduction

TZ-GT01 is a personal remote position device with build-in GPS and GSM/GPRS modules. It is a small size, high accuracy remote location tracking device. Based on GPS satellite , it provides accurate position information under dynamic conditions . Personal remote position device transmit the longitude and latitude coordinate to authorized cell phone.

You can use these features for protecting and searching children and old persons. Further , you can use it as a security purpose and other purpose which needs remote positioning such as asset protection and animal tracking.

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2 Feature:

♦ Build-in GPS personal locator.
♦ GSM /SMS communication or GPRS TCP/UDP connection .
♦ Works worldwide!
    Support 4-frequency GSM 850/900/1800/1900 MHZ.(Optional)
♦ High sensitivity,New technology and latest GPS SiRF-Star III chipset!
      Excellent for fixing the position even at a weak signal status.
      Work well even in areas with limited sky view like urban canyons .
♦ Compact size, and smaller than one name card. Easy to hide
♦ Very Low power consumption
♦ Fast Signal Acquisition
♦ Support single location and continuous tracking
♦ Support location triggered by tracker
♦ Support location triggered by authorized cell phone
♦ Support alarm and remote monitor
♦ Support quick dialing buttons for 2 preset phone numbers
♦ Support check location by SMS and Internet
♦ Monitors can track the person without interfering him,
      LIVE! Real-Time tracking!
♦ Locate the locator holder by the mobile phone via SMS
                              (short messaging system).
♦ SOS button send out exact location for immediate rescue/action.
♦ Geo-fencing to restrict movement to a defined radius.
♦ No monthly service charges to be paid to the call center

New feature:
★ waterproof case;
★ optional magnetic mounted ;
★ with optional external battery (extend to work for 7 days) ;
★ optional pet collar ;
★ **DIY Tracking! Working with Tzone Digital's SMS modem ,customer can watch the position and trace of their object on the map real-time automatically ,without monthly payment ,without any manual input. Support almost all navigation map ,include Google earth.**

3 Specification

Hardware	
GSM module	embedded GSM 850/900/1800 embedded GSM 850/900/1800/1900Mhz (Optional) or GPRS TCP/UDP
GPS Chipset	latest GPS SiRF-Star III chipset
GPS Sensitivity	-158Db
GPS Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
Channels	20 channel all-in-view tracking
Position Accuracy	10 meters, 2D RMS
Velocity Accuracy	0.1 m/s
Time Accuracy	1 us synchronized to GPS time
Default datum	WGS-84
Reacquisition	0.1 sec., average
Hot start	1 sec., average
Warm start	38 sec., average
Cold start	42 sec., average
Altitude Limit	18,000 meters (60,000 feet) max.
Velocity Limit	515 meters/second (1000 knots) max.
Acceleration Limit	Less than 4g
Jerk Limit	20 m/sec

Other	
Operating temperature	-25° to 65° C
Humidity	5% to 95% Non-condensing
Dimension	76 mm × 46 mm × 25 mm
Voltage	Rechargeable and replaceable 1300 mAh battery (3.7V), 5V for charging input.
Charging connector	DC 5V (USB port)
Standby time	Over 20 hours
LED	3 LEDs showing Power, GPS and GSM status, And other operation status.
KEY	3 Keys for SOS Emergency key, quick dial Call A , quick dial Call B

4 Hardware description

Red LED --- indicate power state：

State	Meaning
Constant darking	the power is too low to work or Charging was completed.
Light 0.1s dark 0.1s	The power is not enough
Constant Lighting	Charging
Light 1s dark 2s	Working

Blue LED -- indicate the GPS signal state:

State	Meaning
Constant Lighting	One key be pressed
Light 0.1s dark 0.1s	Initial
Light 0.1s dark 2.9s	GPS receiver work well
Light 1s dark 2s	No GPS signal

Green LED -- indicate the GSM signal state:

State	Meaning
Constant Lighting	One call is coming
Light 0.1s dark 0.1s	Initial
Light 0.1s dark 2.9s	GSM receiver work well
Light 1s dark 2s	No GSM signal

Button Function description

Button	Meaning
Power button	Turn on/Turn off . Please see 6.1 for details
SOS button	You can assign a phone numbers to the SOS button .when this button is pressed,TZ-GT01 will send it's location information to the phone number by SMS ,at the same time,TZ-GT01 will dial to the preset phone number.
Call B button	You can assign a phone numbers to the Quick Call B button .when this button is pressed,TZ-GT01 will dial to the preset phone number.
Call C button	You can assign another phone numbers to the Quick Call C button .when this button is pressed, TZ-GT01 will dial to the preset phone number.

5 Get Started

### (5.1)   Accessories

1. TZ-GT01
2. USB charged cable
3. Charger and car charger
4. Earphone with mini microphone
5. Accessory CD

(5.2)   Charge battery

Before you can use the TZ-GT01, you must
FULLY charge the battery by USB cable at least **2** hours under the power-
off condition.

Charger state indicate :

Red light is On , it indicates that it is in charging.
Red light is Off , it indicates that charge completed.
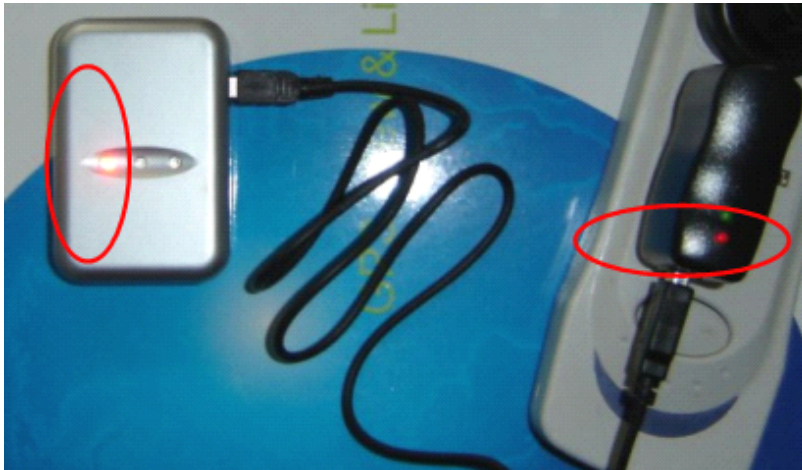
(5.3) Buy SIM card

Buy SIM card from local service provider .

（ note: Please make sure that your SIM card support SMS function and have enough deposit ）

(5.4) Install SIM card

Insert SIM card to TZ-GT01 as following picture shows.

6 Operation

(6.1)   Turn On / Turn Off

Turn on :
When the device is off ,press the power button to on side and wait for about 20 seconds .It will enter standby mode .**It is suggested that you be a outer place where it can receive the better GPS signal** when you turn on the device.

Turn off :
When the device is on ,press the button to off side and wait for 3 seconds .When the LEDs go out ,it indicates that the device is turn off for sure.

(Tips: How to get better GPS signal:

1   Working outdoor,TZ-GT01 can get better GPS signal;

2   The front side of TZ-GT01 should be placed toward sky.   )

(6.2)   Apply for one position service

   No matter where you are ,when you want to know the position of your vehicle , send a SMS or make a telephone call to TZ-GT01;it will report its location back to you by SMS .
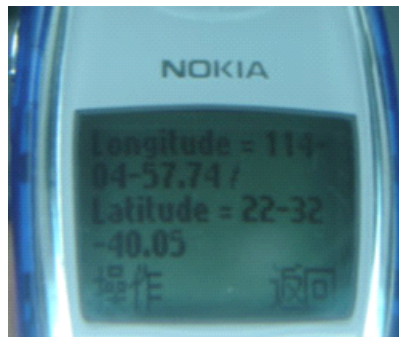
   Edit a message as following format, then send it to TZ-GT01:
   Format: W+Password+, +000
        (init password is : 000000)

For example: W000000,000
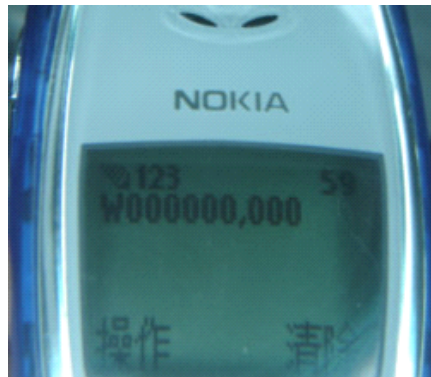
The TZ-GT01 send back one SMS ,which including the position information

Position Data means :

Longitude = 114 degree -   04 cent - 57.74 second
Latitude   =   22   degree - 32 cent - 40.05 second

 (Tips: Apply for one position service by another easier way:

    (a) Dial up the TZ-GT01 number by your mobile phone
    (b) After listening the ring of TZ-GT01 for 10~20 seconds, ring off the phone
    (c) Then, after 20 second, your mobile phone will receive the Position SMS.)

(6.3). Set a preset time interval for tracking report function

    Tracking report function can be turned on or off according to the requirements of the user .**Tracking function will continually report vehicle position until it get stop command.** In this tracking mode,TZ-GT01 will send one position message at a preset time interval.

(it is say that TZ-GT01 will send one position message every time interval)

Step1:   Edit a message as following format, then send it to TZ-GT01:
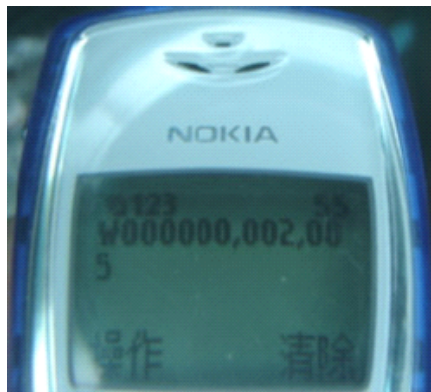   ----- W+Password+,+002,+XXX
    (Note : XXX Unit: preset minutes interval
                   -- if XXX=000 it is STOP tracking)

    For example :   W000000,002,005
    (its means is TZ-GT01 will send Position Data each 5 minute.)

Step 2: TZ-GT01 will send back one SMS ---Set Time(preset time interval) OK

In this example ,the SMS is Set Time (005 Min) OK

This SMS means that TZ-GT01 is in tracking mode now and preset time interval is 5 minutes.

Step3.: TZ-GT01 will send back position SMS at present time interval.

In this example ,the SMS will send back position data at every 5 minutes. The target phone will receive the Position Data each 005 minute.
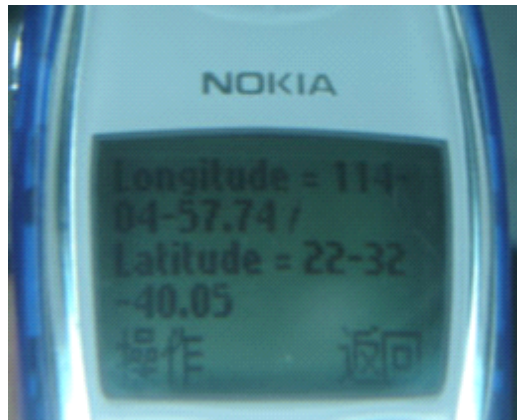
Position Data means :

Longitude = 114 degree -   04 cent - 57.74 second
Latitude   =   22   degree - 32 cent - 40.05 second

(Note:
   if SMS show:
   Longitude = 000 degree -   00 cent - 00 second
   Latitude   =   00   degree - 00 cent - 00 second

   It means that GPS signal is too weak to work well)

(6.4). Stop continuous tracking report function

This function is used to turn off tracking report function.

Edit a message as following format, then send it to TZ-GT01:
    Format: W+passwaord+,+002+,+000
    For example : W000000,002,000

The TZ-GT01 will send back one SMS-----Stop Timer OK. This message means tracking report function is turned off.

(6.5) Set preset phone number for SOS key.

This function is used to set what telephone number will be dialed when press SOS key..

Edit a message as following format ,then send it to TZ-GT01
W+password+,+003+,+3+,+1+,+ area number +telephone number
For example
 "W000000,003,3,1,008613628888444"

Meaning: when the SOS button is pressed for less than 1 seconds, the TZ-GT01 will send one Alarm SMS to "0086 13628888444", and then dial " 0086 13628888444".

Note:
  (a) After SOS button be pressed, you can call and talk with another people by ear microphone
  (b) Press the Call B, you can hang up the call or cancel the SOS call
  *(c) **After press the SOS key,   TZ-GT01 do not go into normal state until you press Call B to cancel the SOS call***

(note: About area number
   According different service provider, you may add need the area number or not, and the area number may be different.
    So, please you try it by some different area number)

(6.6) Make a SOS help

This function is especially useful when in emergency. When SOS key is pressed,TZ-GT01 will in SOS state and send SOS alram SMS and position data SMS to preset phone number. At the same time,TZ-GT01 will dial preset telephone number. When the telephone pick up,2 way communication starts.

When the SOS button is pressed for less than 1 seconds, a SOS help is make.

(6.7) Cancel a SOS call

When in SOS state ,press Call B key to hang up the phone , exit SOS state and return normal state.

(6.8) Dial the preset phone number by Call B or Call C

Press the Call B button/ Call C button for less than 1 seconds, TZ-GT01 will call the according preset phone number, then you can talk with another people.
If you completed this talking, you can hang up the calling by pressing the Call B button.

(6.9) Receive one incoming call

When one call coming, the green light will light , you can press SOS key to receive the calling, then talk with another people by ear microphone.

7 Displaying location on map

   (7.1) download google earth software from   http://earth.google.com/

   (7.2) Start the Google Earth software.(For more information about Google Earth software, please refer to http://earth.google.com/) As following picture shows:

   (Note: pay attention to change the Position Data Format)
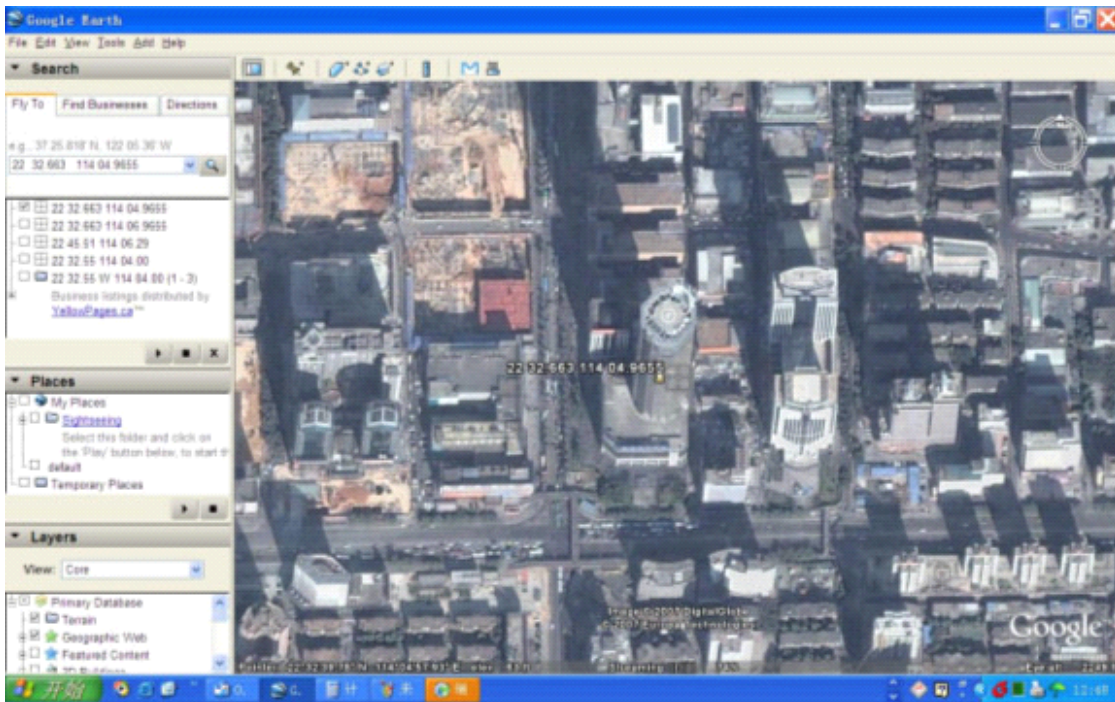
   Or you can start the Internet Explorer and type "http://maps.google.com" to connect to Google Map website for displaying the location map.

(7.3) You can get the latitude & longitude data by sending "W+Password+, +000" SMS command Code to the GPS Tracker TZ-GT01. Input the latitude and longitude that you receive from SMS and click on search button. The Google earth will display the location map for you.
   (7.3) Or you can use local map software on **PDA** or
           Car Navigation Device , input the Position Data.

(Note: pay attention to change the Position Data Format)
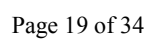
8 More Professional SMS Instruction

****** is user password , and init password is 000000

	SMS Instruction	Format	Note
1	Request one position	W******,000	
2	Modify user password	W******,001,######	****** is old password ###### is new password
3	Set the time internal of position refresh	W******,002,XXX	XXX(3 digital) =000,stop =[1,999] time internal (unit: mins)
4	Set a preset phone number for SOS button/ Call B button/ Call C button; When this button is pressed, TZ-GT01 will dial the preset number.	W******,003,F,P,TelNumber	F =0, close this function =1, only send alarm SMS to the preset number =2, only Call the preset number =3, Send alarm SMS ,then Call the preset number P =1, Set the preset number for SOS key =2, Set the preset number for Call B =3, Set the preset number for Call C TelNumber: Preset Tel number (TelNumber must <16 digits)
5	Set low power alarm When the TZ-GT01 voltage is lower than the preset value, TZ-GT01 will send one lower power alarm SMS to the SOS preset number.	W******,004,X	X (voltage preset value) =0 , close =1, <3.3V send SMS alarm =2 , <3.4V send SMS alarm =3 , <3.5V send SMS alarm (default) =4 , <3.6V send SMS alarm =5 , <3.7V send SMS alarm
6	Set over speed alarm When the TZ-GT01 speed higher than the preset value, TZ-GT01 will send one over speed alarm SMS to the SOS preset number.	W******,005,XX	XX (the speed preset value) =00 , close =[01<XX<20] (unit: 10Km)
7	Set Geo-fence alarm When the TZ-GT01 move out preset scope, TZ-GT01 will send one Geo-fence SMS to the SOS preset number.	W******,006,XX	XX (preset distance to original place) =00 close =01 30m =02 50m =03 100m =04 200m =05 300m =06 500m =07 1000m =08 2000m

| 8 | Extend setting

(note:
Please use this instruction carefully) | W******,008,ABCDEFG### | A=0 , Close position report function which get position SMS by Calling TZ-GT01
A=1 , Open position report function which get position SMS by Calling TZ-GT01

B=0, position SMS format be analyzed in order to read easily.

For example:
Longitude = 114 degree - 04 cent - 57.74 second
Latitude = 22 degree - 32 cent - 40.05 second

B=1, position SMS format is NMEA 0183 Format

For example:
*$GPRMC,072414.000,V,3114.3763,N,12131.3 255,E,0.00,0.00,050805,*00*

C=0, TZ-GT01 do NOT hung up when one call incoming .

C=1,   TZ-GT01 hung up after 4~5 rings when call incoming

D=0,   TZ-GT01 do NOT send one notice SMS to SOS preset number when the TZ-GT01 power on

D=1,   TZ-GT01 do send one notice SMS to SOS preset number when the TZ-GT01 power on

E=0, TZ-GT01 do NOT shut down automatically when the power voltage lower than 3V

E=1, TZ-GT01 will shut down automatically when the power voltage lower than 3V

F=0, TZ-GT01 do NOT send the notice SMS to the SOS preset number when the GPS signal is weak

F=1,   TZ-GT01 send the notice SMS to the SOS preset number when the GPS signal is weak

G=0,   Open 3 LED when TZ-GT01 works

G=1,   Close 3 LED when TZ-GT01 |

			works ###, end char (default value should be : ABCDEFG=1011110)
9	Set sleep mode for saving power.	W******,021,XX###	XX=00 close sleep mode XX=01 sleep XX=02 deep sleep
10	Open International SMS Function	W******,023,X	X=1 Open the International SMS Function X=0 Close the International SMS Function
11	Search Software Version and Tracker ID	W******,600**,.**	Unit will reply the version and ID Notice:in the end of command have a ",."
	GPRS setting		

12	Set the phone number for TZ-GT01 for GPRS	W******,010,tel	tel :
			   telephone number according the SIM card of TZ-GT01
			   (tel must be < 14 digits)

13	Set APN	W******,011,APN, Name,PW	APN : APN string NAME : username to login server PW : password to login server NAME and PW is option or empty
14	Set IP Address &port number	W******,012,IP,PORT	IP: xxx.xxx.xxx.xxx PORT：[1,65536]
15	Open / Close GPRS function	W******,013,X	X=0 close GPRS X=1 open GPRS
16	Set GPRS time interval	W******,014,XXXXX	X=00000 GPRS stop send data The unit is 10s X=00006 time interval is 60s

9 SMS Instruction Example:

(1) Send Instruction " W******,000"

    Meaning: Apply one position, TZ-GT01 will reply one position SMS

(2) Send Instruction "W******,002,005"

    Meaning: Set the time internal of position refresh, TZ-GT01 will replay one position SMS
             each 5 minutes.

(3) Send Instruction "W******,003,3,1,(area number)＋13628888444"

    Meaning: when the SOS button be pressed, the TZ-GT01 will send one SMS to
           "13628888444", **and** then dial up "13628888444".   --

(4) Send Instruction "W******,003,3,2, (area number)＋13628888444"

    Meaning: when the Dial button A be pressed, the TZ-GT01 will send one SMS to
           "13628888444", **and** then dial up "13628888444"

(5) Send Instruction "W******,003,1,3, (area number)＋013628888444"

    Meaning: when the Dial button B be pressed, the TZ-GT01 will **only** send one SMS to
           "13628888444".

(6) Send Instruction "W******,005,03"

    Meaning: when the speed is up 30 km/h, the TZ-GT01 will send one Alarm SMS the
           mobile phone linking to SOS alarm

10 GPRS communication setting

step1: make sure that your SIM card in TZ-GT01 have the GPRS faction

Step2: Set the phone number of TZ-GT01 by send one SMS:

   SMS Format: W******,010,tel

   For example :
   W000000,010,13616165678

   TZ-GT01 will response one SMS to check it.

Step3 : Set IP address and Port by send one SMS

   SMS Format: W******,012,IP,PORT

   For example :
   W000000,012,202.116.11.12,8000

   TZ-GT01 will response one SMS to check it.

Step4: Set APN
      SMS format : W*****,011, APN

      For example :
      W000000,011, CMNET

Step5: Enable GPRS function

   SMS format: **W******,013,X**

   For example: W00000, 013, 1

   TZ-GT01 will response one SMS to check it.

（Note: 1 TZ-GT01 default value is GPRS Disable
         2 SMS W0000,013,0 is disable GPRS function)

Step6 : According to GPP communication protocols of TZ-GT01, the server can analyses
         the GPRS data.
          Or According to NMEA V3 protocol , the server can analyses the GPRS data.

11 Caution:

a) This device is not design for water-proof, and you must use the water-proof bag accessory

b) This device must work with GPRS/GSM network.

c) Make sure enough deposit in the SIM card to avoid any in convince.

12 DIY !!! Build your control center system on your PC

Tzone GPS provide one low cost solution help you build your control center system on your PC, which is very cheaper than other center system.

You NEED: ---- *(very low cost)*

(1) Google Earth Plus (http://earth.google.com/products.html)
      Or any other navigation map software (PC version)

(2) one PC

(3) TZ-GTM01 SMS modem (provided by Tzone GPS)

(4) TZONE Modem_Center software on PC (provided by Tzone GPS)

(5) Some TZ-GT01   (provided by Tzone GPS)

TZ-GT01   TZ-GT01   TZ-GT01   TZ-GT01

SMS

GSM Network

SMS

USB Port

TZ-GTM01 SMS modem   Tzone TrackMaker software
                                      + any navigation map software/googel earth
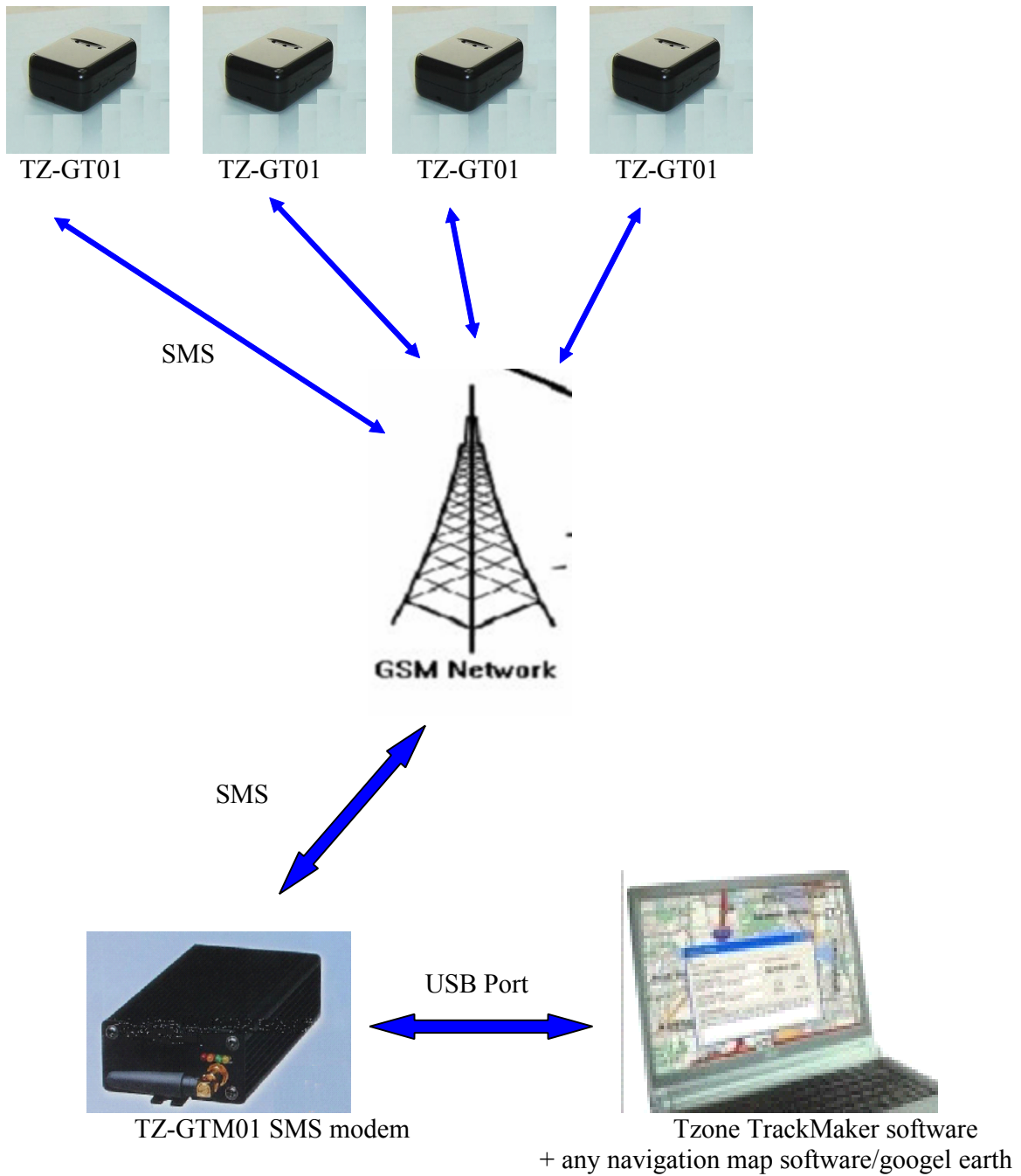
Google earth
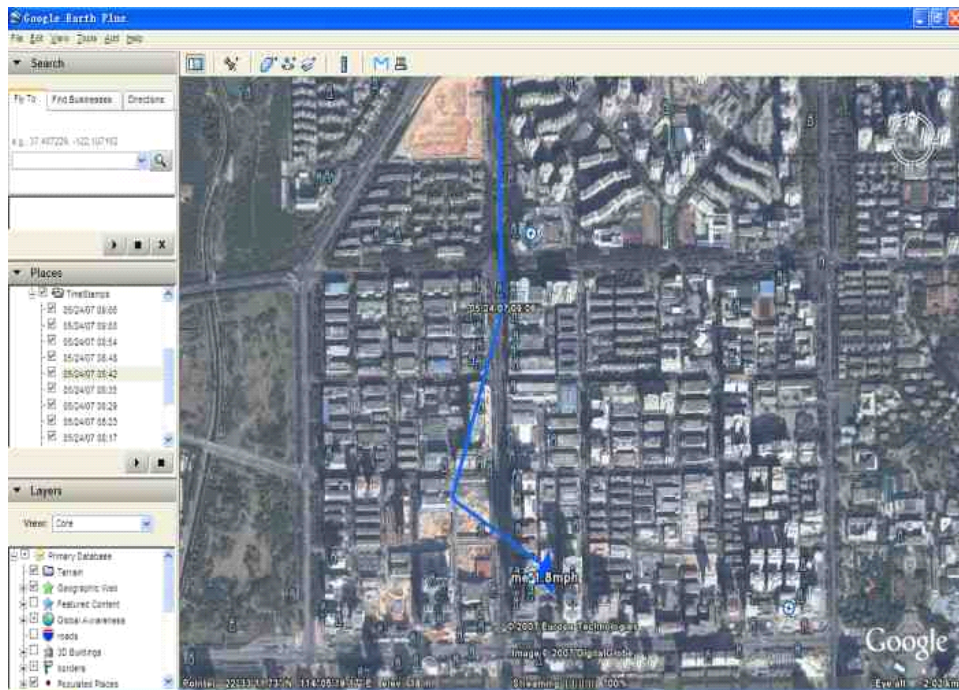
One navigation map software
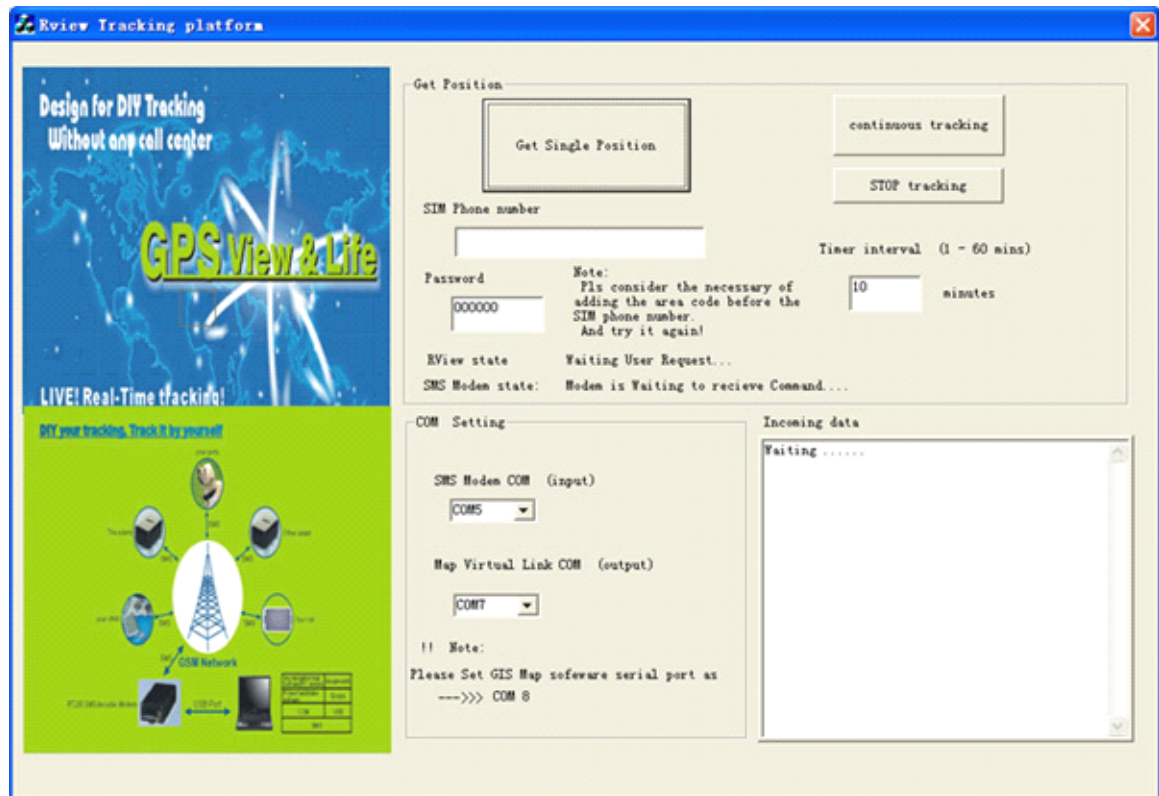
TrackMaker software

Attachment :Worldwide APN (Access Point Name) List

Country	Mobile operator	Access point name
Argentina	Personal	gprs.personal.com
Argentina	Unifon	internet.gprs.unifon.com.ar
Australia	Telstra	telstra.internet
Australia	Optus	internet
Australia	Three	3netaccess
Australia	Vodafone	internet
Austria	Max Online	gprsinternet
Austria	One	wap.one.at
Belgium	Orange	orangeinternet
Belgium	Mobistar	web.pro.be
Belgium	Proximus	internet.proximus.be
Bermuda	AT&T	proxy
Bermuda	Mobility	net.bm
Brazil	Claro	claro.com.br
Brazil	Oi	gprs.oi.com.br
Brazil	TIM	tim.br
Bulgaria	Mobiltel (Mtel)	inet-gprs.mtel.bg
Canada	Fido	internet.fido.ca
Canada	Rogers AT&T	internet.com
Chile	Entel PCS	imovil.entelpcs.cl bam.entelpcs.cl
Chile	Telefonica GSM	web.tmovil.cl
China	China Mobile	cmnet
Croatia	VIPNET	gprs.vipnet.hr
Czech Republic	Eurotel	internet
Czech Republic	Oskar	internet
Czech Republic	Oskar prepaid cards	ointernet
Czech Republic	T-Mobile	internet.t-mobile.cz

Denmark	TDCmobil	internet
Denmark	Orange	web.orange.dk
Eygpt	Vodafone	internet.vodafone.net
Dominican Republic	Orange Dominicana	orangenet.com.do
Finland	Telia Mobile	internet
Finland	DNA	internet
Finland	Sonera	internet
Finland	Radiolinja	internet
Finland	Saunalahti	saunalahti
France	Orange	orange.fr
France	SFR	websfr
France	Bouygues Telecom	eBouygTel.com
Germany	D2 Vodafone	web.vodafone.de
Germany	E-Plus	internet.eplus.de
Germany	O2	internet
Germany	Quam	quam.de
Germany	T-Mobile D1	internet.t-d1.de
Greece	Vodafone	internet.vodafone.gr
Greece	Telestet	gint.b-online.gr
Greece	Cosmote	internet
Hungary	Vodafone (Prepaid "Optimized")	vitamax.internet.vodafone.net
Hungary	Vodafone (Prepaid "Standard")	vitamax.snet.vodafone.net
Hungary	Vodafone (Postpaid "Optimized")	internet.vodafone.net
Hungary	Vodafone (Postpaid "Standard")	standardnet.vodafone.net
Hong Kong	CSL	internet
Hong Kong	Orange	web.orangehk.com
Hong Kong	New World	internet
Hong Kong	People	internet
Hong Kong	SmarTone	internet

Hong Kong	Sunday	internet
India	Orange, Hutch	www
Iceland	Siminn	gprs.simi.is
India	BPL Mobile	bplgprs.com
India	Airtel	airtelgprs.com
Indonesia	Telkomsel	internet
Ireland	O2	internet
Ireland	Vodafone	live.vodafone.com
Israel	Cellcom	internetg
Israel	Orange	internet
Italy	TIM	uni.tim.it ibox.tim.it
Italy	Vodafone Omnitel	web.omnitel.it
Italy	Wind	internet.wind
Latvia	Latvia Mobile Telefone	internet.lmt.lv
Luxembourg	LUXGSM	web.pt.lu
Luxembourg	Tango	internet
Malaysia	Celcom	celcom.net.my
Mexico	Movistar	internet.movistar.mx
Mexico	Telcel	internet.itelcel.com
Montenegro	Monet	gprs.monetcg.com
Netherlands	T-Mobile	internet
Netherlands	KPM Mobile	internet
Netherlands	Orange	internet
Netherlands	O2	internet
Netherlands	Vodafone (normal)	web.vodafone.nl
Netherlands	Vodafone (business)	office.vodafone.nl
New Zealand	Vodafone NZ	www.vodafone.net.nz
Norway	Netcom	internet.netcom.no

Norway	Telenor	internet
Pakistan	UFone	ufone.internet
Paraguay	Personal	internet
Paraguay	Tigo	internet.tigo.py
Philippines	Smart	internet
Philippines	Globe	internet.globe.com.ph
Poland	Era	erainternet
Poland	Idea	www.idea.pl
Poland	PlusGSM	www.plusgsm.pl
Portugal	Optimus	internet
Portugal	TMN	internet
Portugal	Vodafone (Telcel)	internet.vodafone.pt
Romania	Connex	internet.connex.ro
Romania	Orange	internet
Russia	BeeLine	internet.beeline.ru
Russia	Megafon	internet.nw
Russia	MTS	internet.mts.ru
Russia	PrimTel	internet.primtel.ru
Saudi Arabia	Saudi Telecom	Jawalnet.com.sa
Serbia-Montenegro	Mobtel Srbija	internet
Serbia-Montenegro	Telekom Srbija	gprsinternet
Singapore	M1	sunsurf
Singapore	Singtel	internet
Singapore	Starhub	shwapint
Slovakia	Eurotel	internet
Slovakia	Orange	internet
South Africa	MTN	internet
Spain	Amena	amenawap

Spain	Telefonica (Movistar)	movistar.es
Spain	Vodafone	airtelnet
Sweden	Telia	online.telia.se
Sweden	Vodafone SE	internet.vodafone.net
Switzerland	Swisscom	gprs.swisscom.ch
Switzerland	Orange CH	internet
Switzerland	sunrise	internet
Switzerland	UMC	www.umc.ua
Taiwan	Chunghwa Telecom	internet
Taiwan	Far EasTone	fetnet01
Taiwan	KG Telecom	internet
Taiwan	Taiwan Cellular	internet
Thailand	AIS	internet
Thailand	DTAC	www.dtac.co.th
Turkey	Avea	internet
Turkey	Aycell	aycell
Turkey	Telsim	telsim
Turkey	Turkcell	internet
UK	Jersey Telecom	pepper
UK	O2	mobile.o2.co.uk
UK	T-Mobile	general.t-mobile.co.uk
UK	Vodafone UK	internet
UK	Orange	orangeinternet
Ukraine	Kyivstar GSM	www.kyivstar.net
Ukraine	UMC	www.umc.ua
USA	T-Mobile	internet2.voicestream.com
USA	AT&T	proxy
USA	Cingular	isp.cingular
Venezuela	Digital TIM	gprsweb.digitel.ve