GPS Vehicle Tracker

User Manual (Model: VT1000)

Please Read Carefully Before Operation


Security of Rental Car


Monitoring of Public Conveyance


Ambulance assignment


Cargo Logistic Assignment


Fleet Management


Taxi Assignment


Security of the Outdoor Activities

Contents

1. Product Overview

VT1000 is a most advanced and high-cost effective GPS tracker, it is equipped with ARM9 high speedy microprocessor; using fully new and industrial grade modules, so VT1000 has high sensitivity and stable performance. Its functions also very powerful, it can supporting camera (location &driving information log on picture). Bidirectional communication; support max 64GB SD card for storing data and pictures; 4 A/D connectors for multi fuel sensor monitoring; support unique active RFID for automatic anti-theft and driver identification; support OTA (updating online) for upgrading new firmware by GPRS if needed; with harsh braking & acceleration alarm and accident alarm; and many useful functions and extensibility for fleet management and vehicle security purpose.

2. Applications

- Vehicle Real Time Tracking
- Vehicle Security/Anti-Hijack
- Fleet Management

3. Features & Functions

* Tracking by SMS/GPRS (TCP/UDP)
* Tracking by time/distance interval
* OTA Function
* Real time tracking via the web-platform
* Get position location via call/SMS
* Engine on/off detection
* Built-in backup 950 mAh battery
* Remote Engine cut off to stop the car in safe condition
* ARM9 high speed microcontroller
* Wiretapping/remote listening
* Get location physical name via SMS & from the web-platform
* Google Map link for location via SMS, it shows your location on map via mobile phone.
* Mileage calculation with longitude and latitude via SMS; view mileage data via GPS web-based tracking centre system
* Door open/close status detecting/ control
* Built-in motion sensor for power & GPRS flow saving mode (sleep mode)
* Built-in 4MB memory & position logging capacity up to 26,000+ waypoints even no GPRS signal
* I/O: 5 Inputs, 5 Outputs, 4 Analog Inputs.
* Over speed alert
* Geo-fence alert
* Power failure/low power alert
* SOS Panic button, SOS alert

* Harsh braking and harsh acceleration alarm
* Suddenly acceleration/brake alert
* Accident Alarm (optional)
* Two way communication (Listen & Speak, need speaker support) (optional)
* Oil leaking/Refuel Alarm (need fuel sensor support) (optional)
* Accident alarm (need crash sensor support) (optional)
* Support max 64G SD card store (optional)
* Photo with location & driving information log function (need camera support) (optional)
* Can equip with RFID kit for driver identification and auto Arm/Disarm functions (movement/towed alert, ignition alert, auto cut off engine etc) (need RFID support) (optional)
* Analog input for Temperature & Fuel sensor detecting/monitoring, support max 4 fuel sensor manage (optional)

4. Specifications

Items	Specifications
Dimension	110*80*30mm
Weight	180g
Input voltage	DC 9V~35V/1.5A
Back-up Battery	850mAh
Velocity	515 meters/second (1000 knots) max
Operating Temperature	-20°C~75°C
Humidity	5%~95% Non-condensing
Altitude Limit	18,000 meters (60,000 feet) max
LED	2 LED lights to show GPS, GSM status
Button	1 SOS and 1 power on/off
Microphone	Default
Cold start	42sec., average
Hot Start	1 sec., average
GSM Frequency	GSM 850/900/1800/1900MHz or GSM 900/1800/1900 MHz
GPS Chip	Latest GPS SIRF-Star III Chipset
GPS Sensitivity	-158dB
Positioning Accuracy	10meters, 2D RMS
GPS Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
Channels	20 channel all-in-view tracking
Velocity Accuracy	0.1m/s
Time Accuracy	1 us synchronized to GPS time
Default datum	WGS-84
Reacquisition	0.1 sec., average
I/O	5 Input 5 Output 1 Camera Port 4 Analog Input 1 RS232 Port 1 MIC& Speaker Port 1 USB Port 1 SD Card Slot

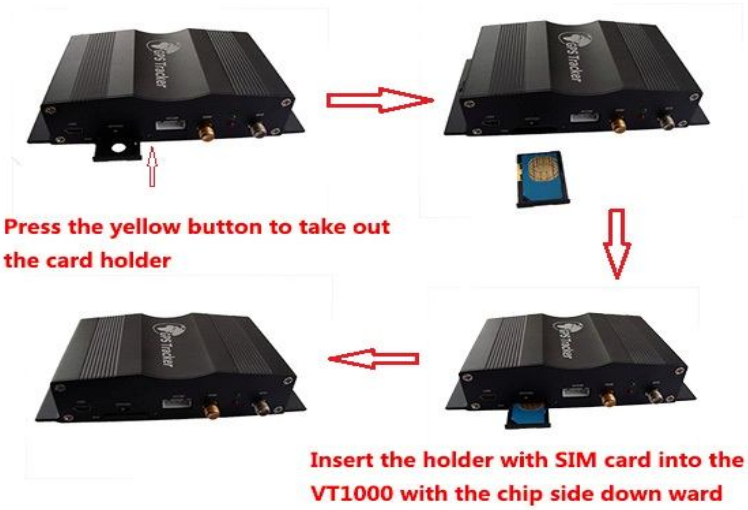
5. First Use

5.1 Install SIM Card

Check that the SIM has not run out of credit (test the SIM in a phone to make sure it can send and receive SMS);

Before installing the SIM card, turn off the power for VT1000,

then install the SIM card as following:



5.2 Charging

Connect the device with external power like car battery, and turn on its power switch and it will do charging automatically.

5.3 LED indications

Push the power switch to turn on/off VT1000

GPS LED (Red)	
Flashing (every 0.1 second)	Initializing or back-up battery power is low
Flashing (0.1 second on and 2.9 seconds off)	Device has A GPS fix
Flashing (1 second on and 2 seconds off)	Device has no GPS fix
GSM LED (Green)	
Flashing (every 0.1 second)	Initializing
Flashing (0.1 second on and 2.9 seconds off)	Device is connected to the GSM network
Flashing (1 second on and 2 seconds off)	Device is not connected to the GSM network

6. Connect the tracker VT1000 to GPRS01 Web Server Platform

Two Methods to set GPS tracker online:
Configure by Computer or SMS Commands

Optional 1: Configure by Computer to set GPS tracker online

This part shows the basics of how to use the GPS tracker Parameter Editor.
Note: Don't connect VT1000 to external battery when configuring.

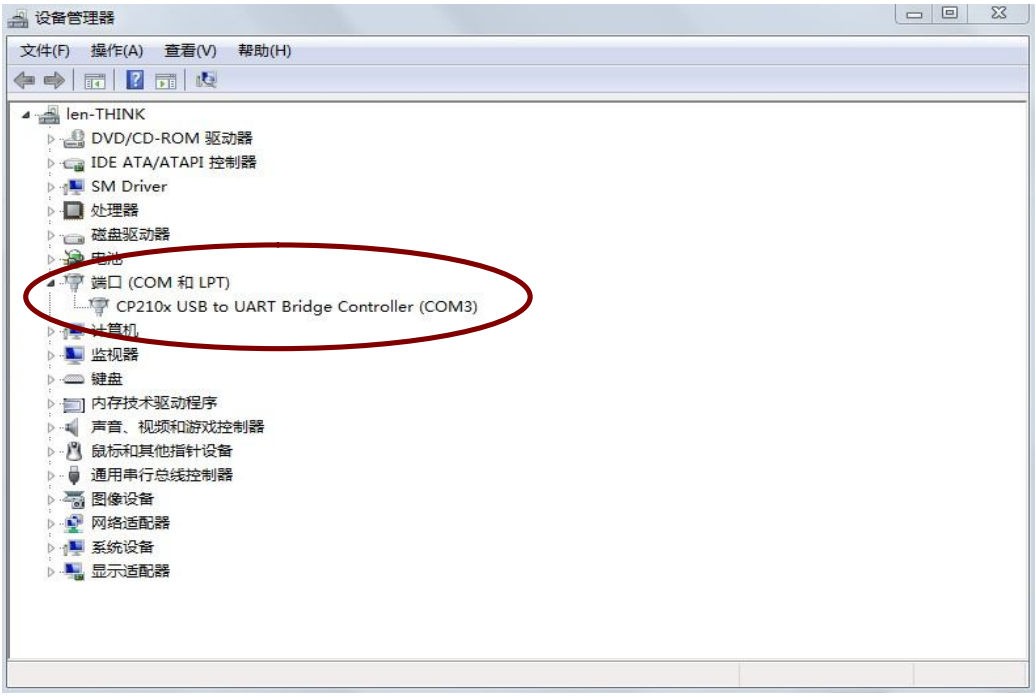
How to Edit the Parameters of Tracker on PC
① (Buy one specific USB cable for configuration from our Company)

USB configure cable

② Install USB driver program for the configuration USB cable
1. Run 'CP210x_Prolific_DriverInstaller' to install the driver for the USB data cable.
Note: CP210x_Prolific_DriverInstaller is in the folder 'USB-232 Driver' in the CD. Connect the USB Data Cable between VT1000 and PC.

2. Connect the configuration cable with PC, open device management of your computer, you can find "Prolific USB-to-Serial Comm. Port " ,as following picture shows.

The USB port is virtual comm. Port (com3) in this example,

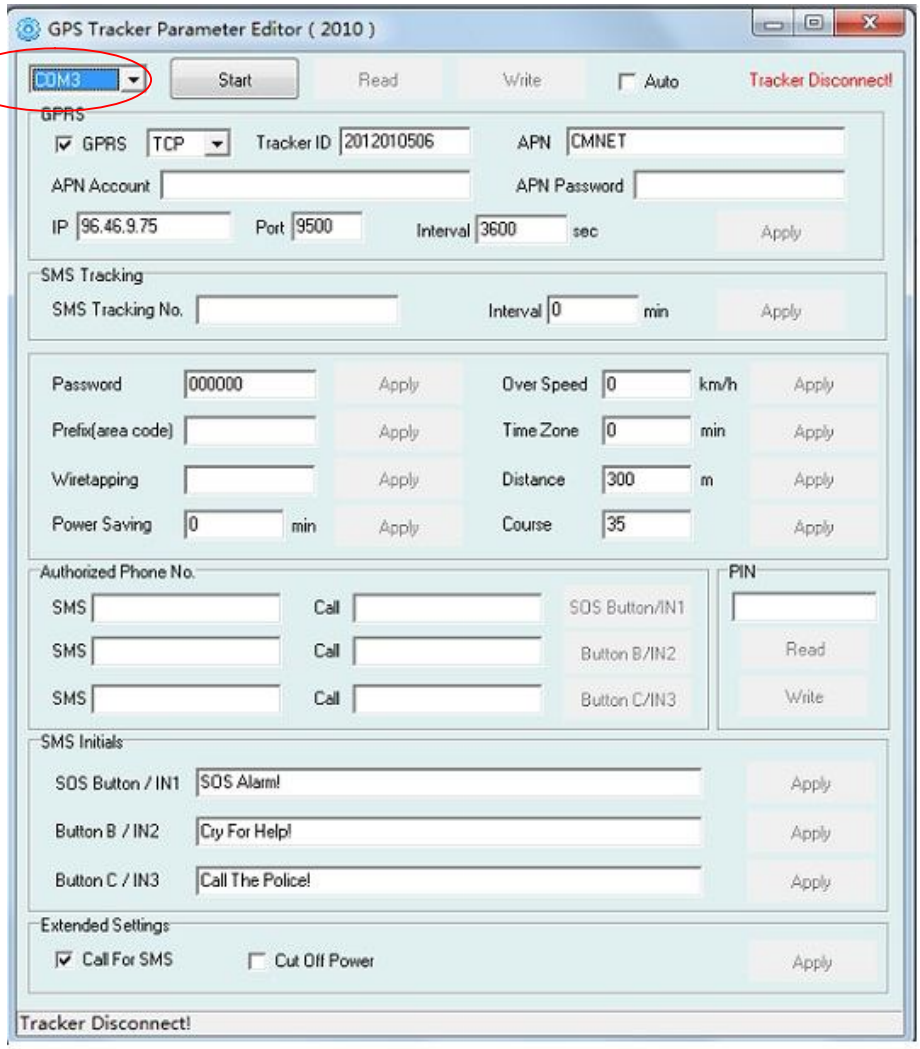


3. Open the GPS Tracker Parameter Editor

① Connect VT1000 with PC by the configuration cable

② Confirm VT1000is in the Power Off states

③ Double click GPS Tracker Parameter Editor.exe and Select the COM Port, following picture shows:

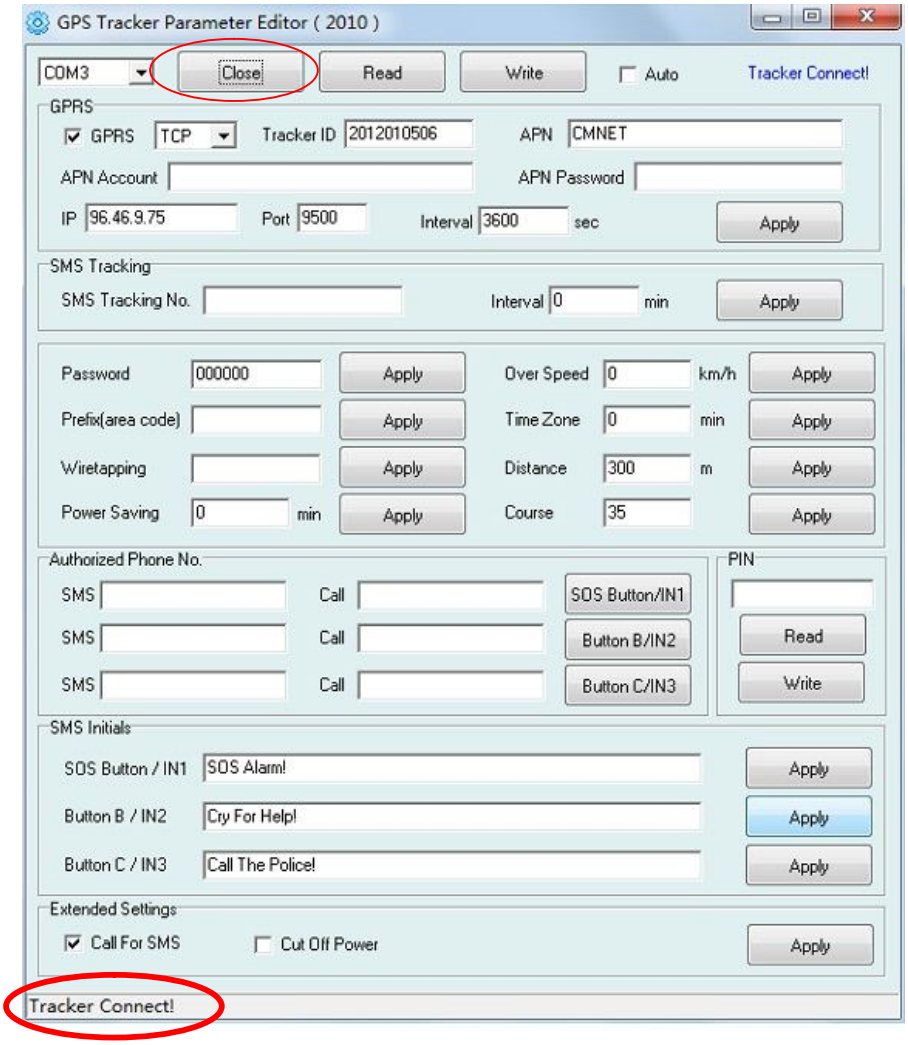


4. Click Start button to open the COM port,

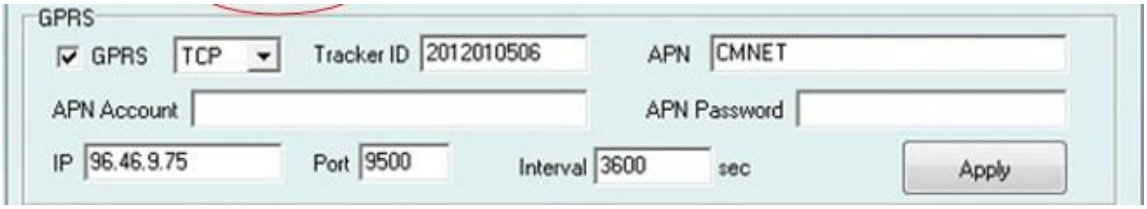
5. Turn on VT1000 and it will connect with the Editor automatic, As soon as they connect successful, all the buttons are availability and the status bar will clue on' Tracker Connect!' , first click "Read" to read the tracker's parameter, when all the parameter read out, you can write the parameter you need.

Note: "Read" button: when you click the Read button, it means Read the parameters of the tracker.

"Write" button: when you write the parameters to the Parameter Editor, then click the Write button, the parameters will write into the tracker.



Instruction of parameter settings:

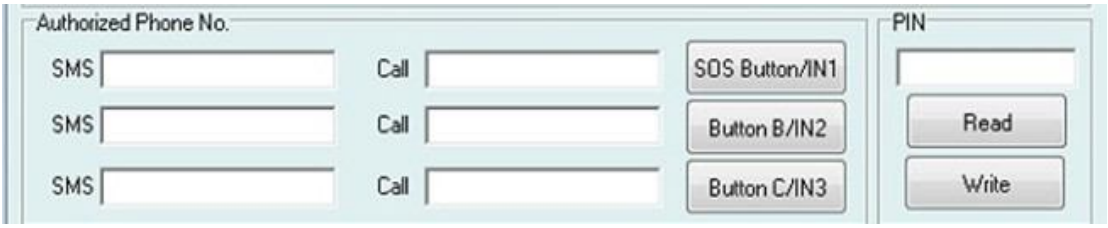


Item	Description
GPRS	Tick to enable GPRS function, select TCP or UDP mode
Tracker ID	Should be unique, in number, maximum 14 digits
APN, APN Account, APN Password	Put your local APN, APN username and password if necessary
IP, Port	Put online tracking server IP and port, our default is IP:www.global-track.net port: 9500
Interval	Time interval, to put time interval to upload a data

Note: GPRS, IP, Port is the default. You must change the APN, Tracker ID;

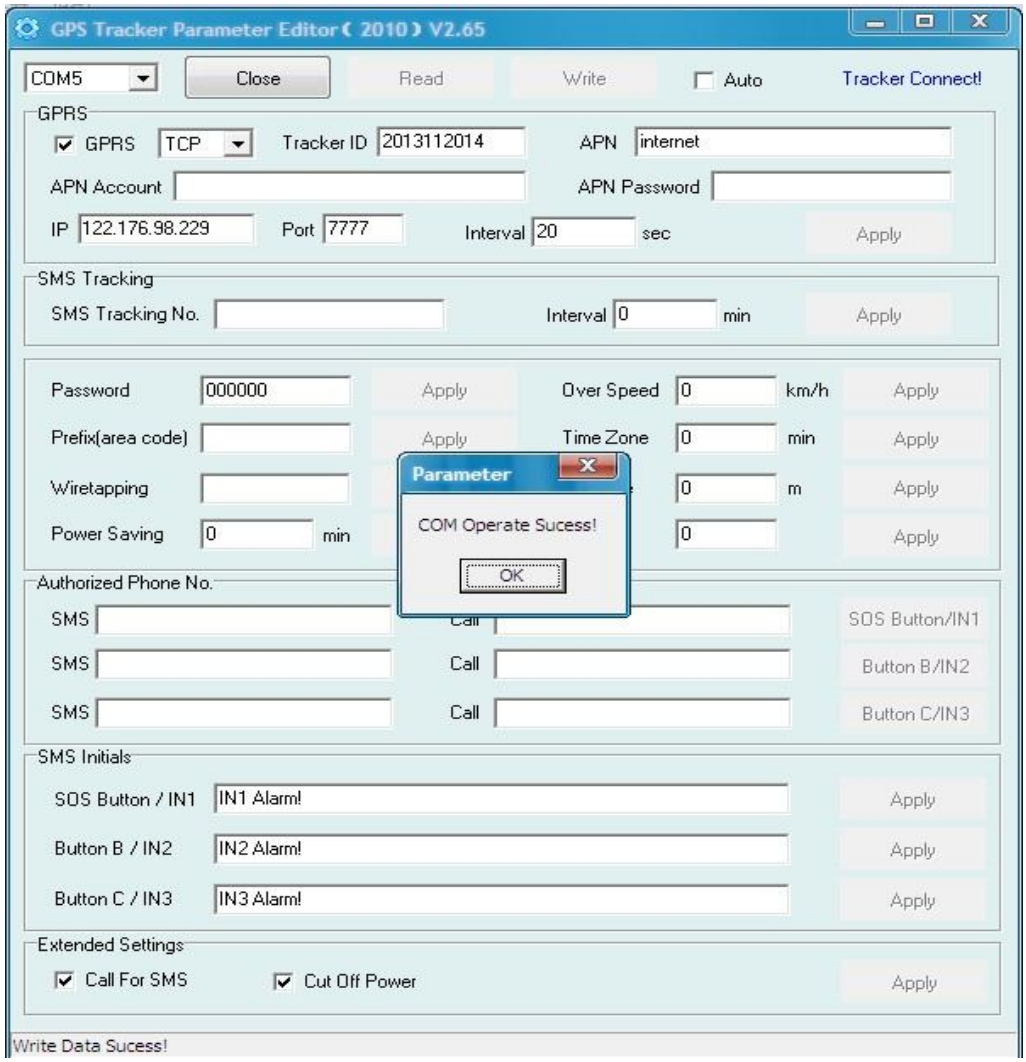
APN: Access Point Name, if you don't know, please ask SIM operator or search APN in Google.

Tracker ID: You should change the tracker ID. Tracker ID can be set freely by user but less than 14 digits, such as 20131122001.



Item	Description
SMS Call SOS Button/IN1	To set Mobile phone No. for SMS or Calling when SOS button/Input 1 is triggered (alarm), it will call/SMS to this phone
SMS Call Button B/IN2	To set Mobile phone No. for SMS or Calling when Button B/Input 2 is triggered (alarm), it will call/SMS to this phone
SMS Call Button C/IN3	To set Mobile phone No. for SMS or Calling when Button C/Input 3 is triggered (alarm), it will call/SMS to this phone

After write finished, click “Write” button to configure the VT1000’s Parameters. It will pop-up a mini window, as below pictures:



Please click "Read" button again, confirm your write parameter.

When you finished the GPS Tracker Parameter Editor, then turn off the tracker, pull up the USB cable.

Note: More about configure by computer, please check Appendix 1

Optional 2: SMS Commands to set GPS Tracker online

① Set ID by SMS

Command: W000000,010,ID

Description: every tracker has a unique ID. Tracker ID must be less than 14 digitals

Example:

SMS send: W000000,010,20120823

Meaning: this tracker's ID is 20120823

② Set APN by SMS

Command: W000000,011,APN,APN name, APN password

Description: APN name, APN username, APN password

If no password required, just put in APN name only.

③ Set IP Address and Port by SMS

Description: IP address is 210.209.68.180 Port is 9500

SMS command: W<password>,012,<IP>,<port>

Example:

SMS send: W000000,012, 210.209.68.180,9500

We support domain name instead of IP address:

Example: W000000,012,www.global-track.net,9500

④ Enable GPRS Function

Command: W<password>,013,X

Description: X=0,close GPRS(Default)

X=1,enable TCP

X=2,enble UDP

⑤ Set Time Interval for Sending GPRS Packet

Command: W<password>,014,XXXXX

Description: XXXXX should be in five digitals and in unit of 10 seconds.

XXXXX =00000, to disable this function

XXXXX =00001~65535, time interval for sending GPRS packet and in unit of 10 seconds

Note: More GPRS01 Platform functions, please check manual of Operation Instruction of Topshine web-based tracking platform GPRS01.

Next Step: Settings on Topshine GPRS01 Platform

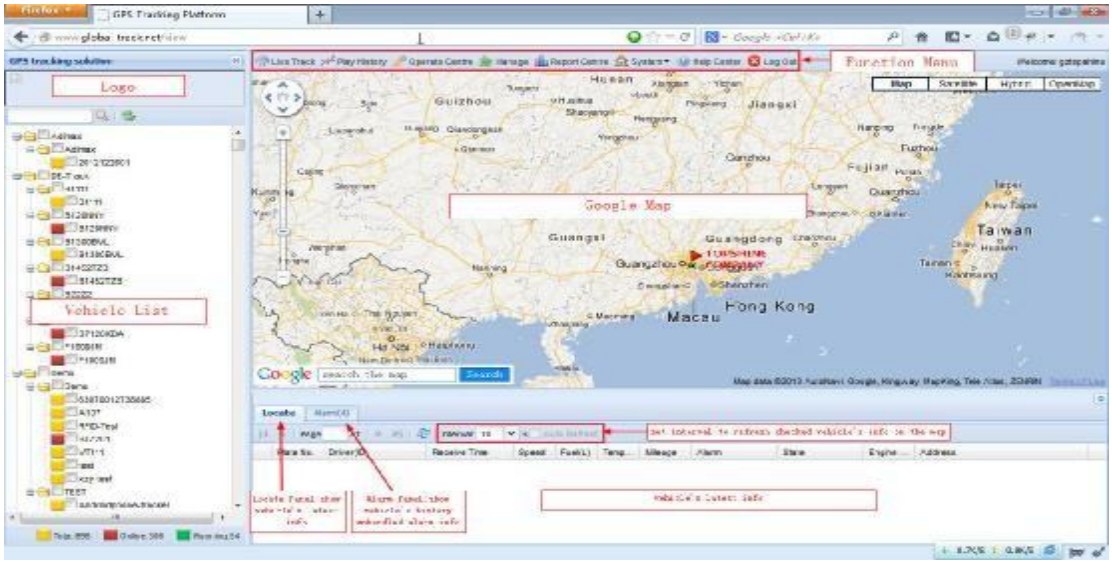
Turn on the tracker VT1000, when it normal working (find the GSM & GPS signal),

① Login Topshine GPRS01 Platform

Website: www.global-track.net

User Name: ***

Password: ***



Note: Red box means the vehicle Online;
Yellow box means the vehicle offline;
Green box means the vehicle running.

② Vehicle Information Management

Centralized management of all vehicles in the platform, the "Kind, GPRS ID, Plate No." are mandatory terms, and the **GPRS ID** must be consistent with the **tracker ID**.

Set up a new group and new vehicle information. For example,

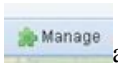
Group name: demo123

Username: demo123 (can be set different from group name)

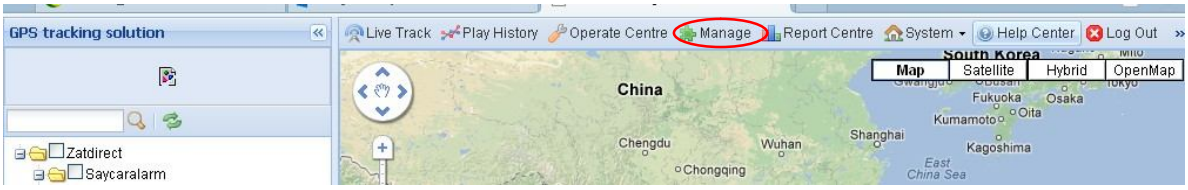
Password: 123

Vehicle name: Benz2012

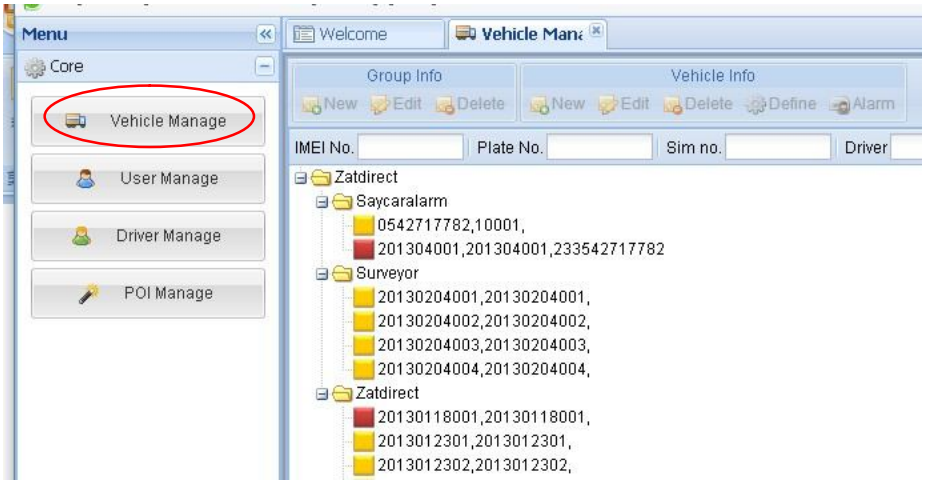
③ Set up information for a new group e.g. 'demo123'

Click picture 1 " manage" 

and then click the picture 2, "Vehicle Manage."



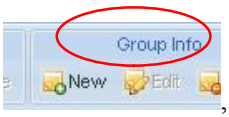
Picture 1

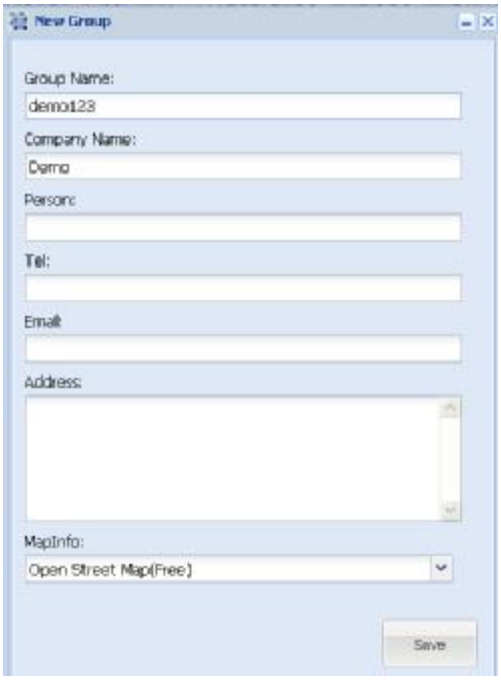


Picture 2

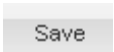
Click the company name, e.g. 

in picture below:

Click  in  , then you can see picture below:

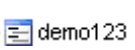


Input 'demo123' in the blank of Group Name 

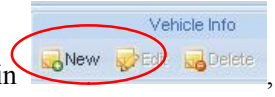
Click 

， then group 'demo123' is ready as below:

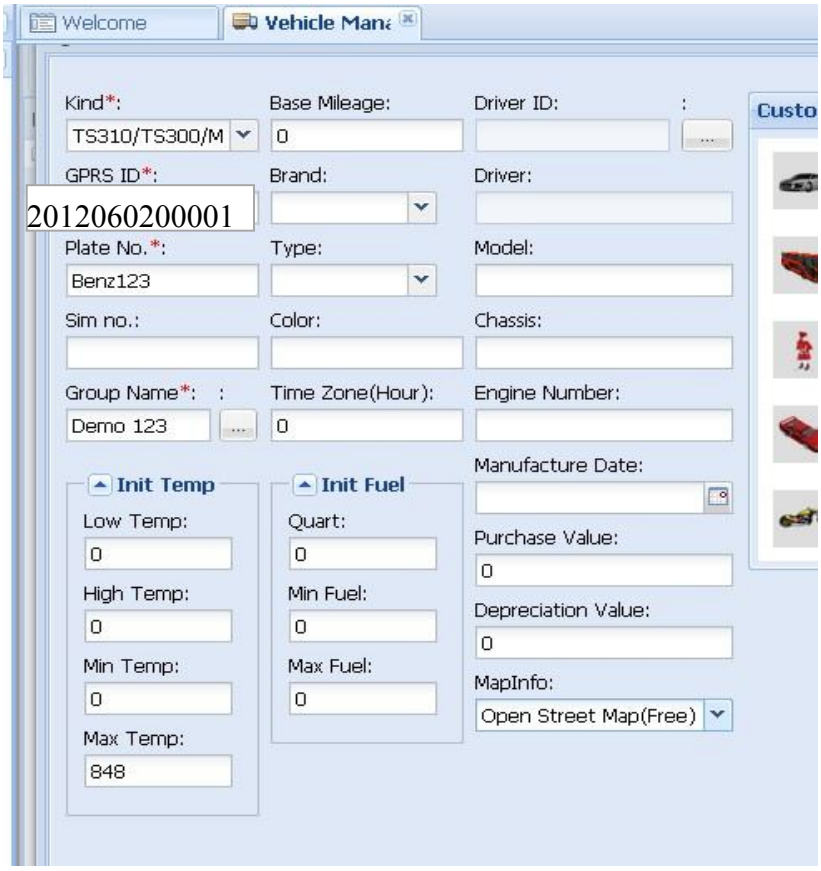
④ Set up information for a new vehicle e.g. 'Benz123'

Click the group name 

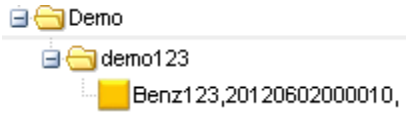
, and click 

in 

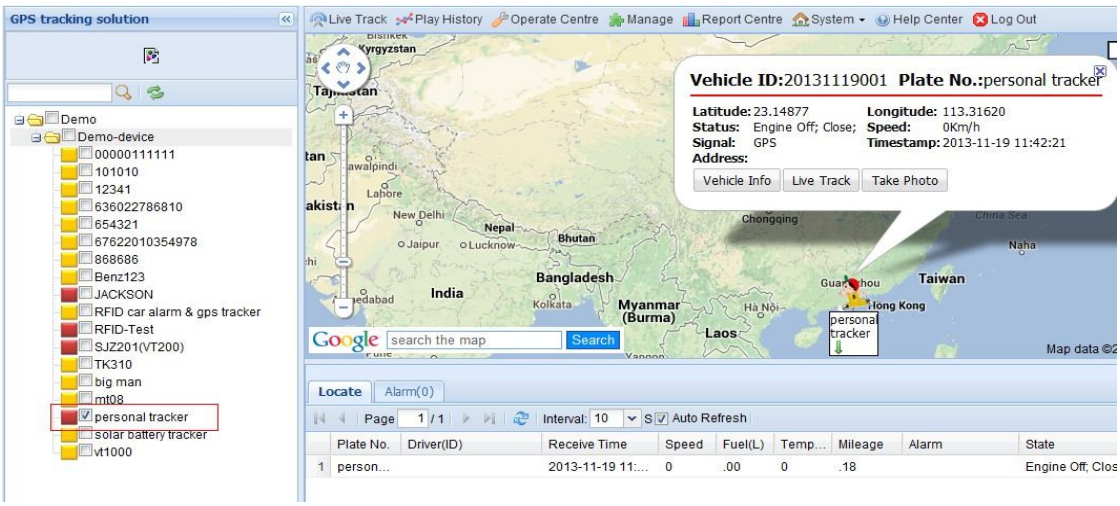
, then you can see picture below:



Input the correct Kind, GPRS ID and Plate No. and Customize Mark etc. necessary information, click Save, then you can see group ‘demo123’ and vehicle ‘Benz123’ with tracker ID 20120602000010 have been set ready as below.



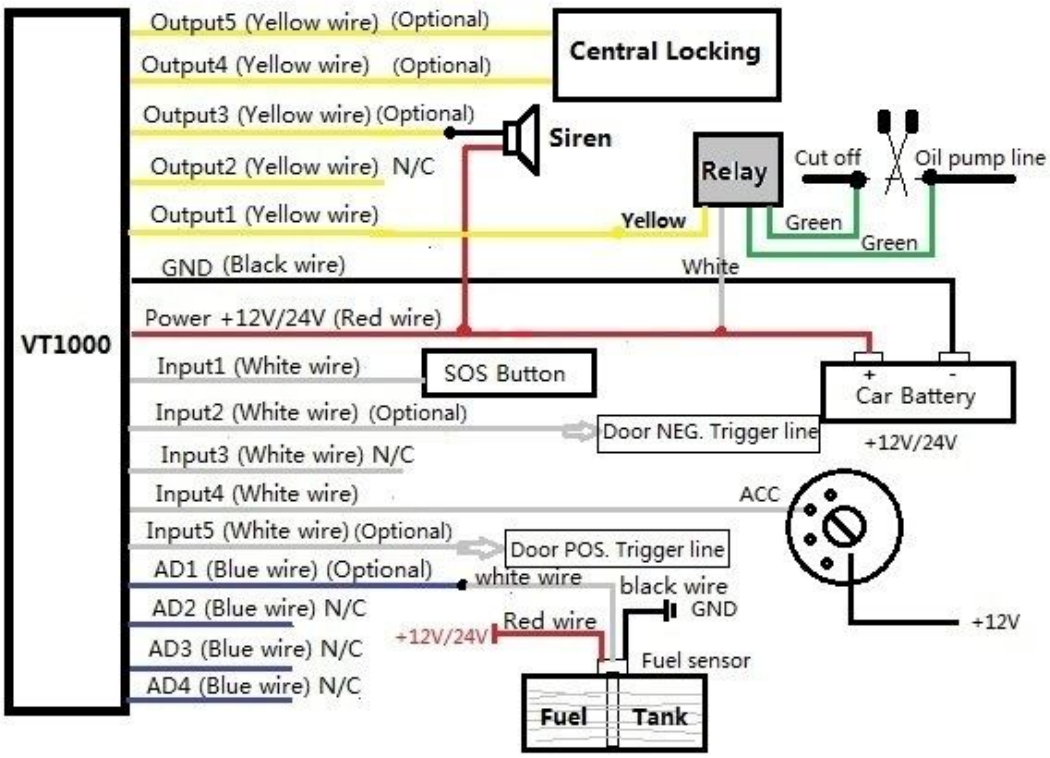
Once again into the main interface, select the little red box, you will see the tracker location. Such as following picture:

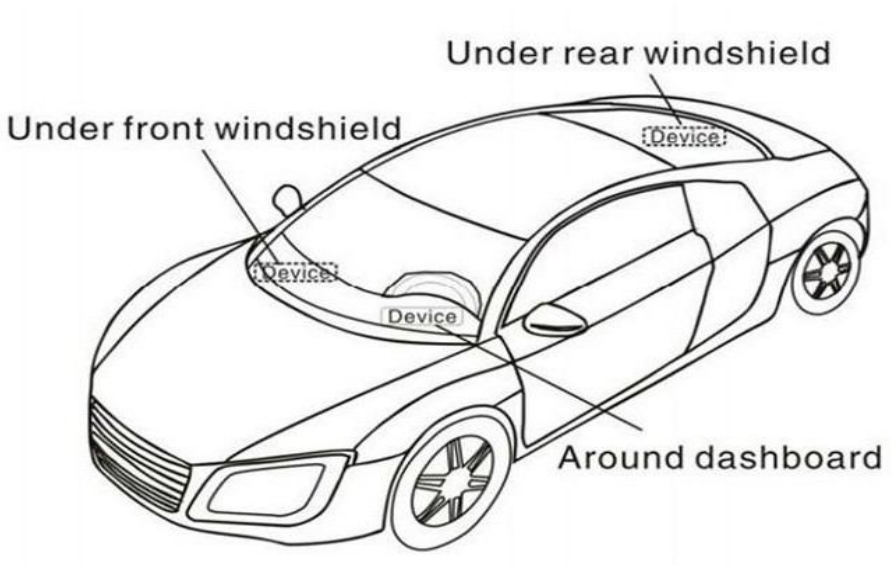


7. Installation

- Please select experienced technicians to install this system.
- The installation should be carried in the working condition for this system.
- Install this system in a secret place.
- Prevent this system from dust and humidity.
- Connect the wires of the mainframe. The Relay can control oil pump wire or electric wire (ACC). It suggested connecting it to oil pump wire.
- Connect the wires of other wires, leave the plug unplugged.
- Fixing, wiring connecting, binding should be carried on carefully.

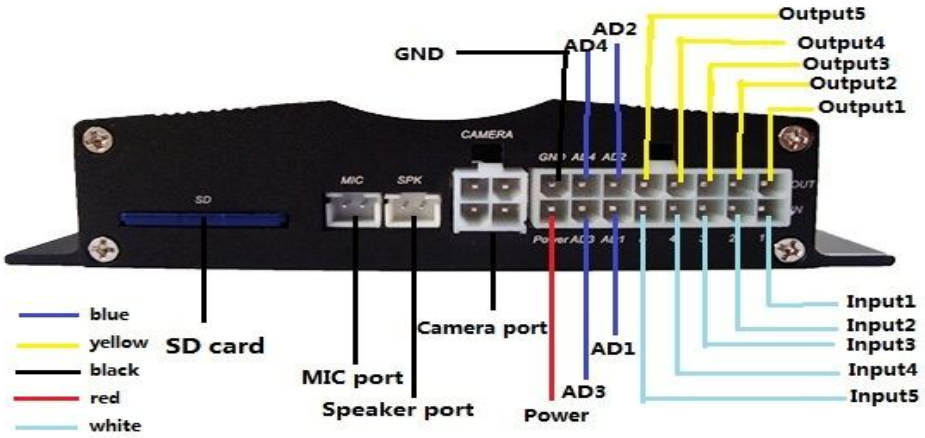
Installation Diagram





7.1 Install I/O Cable

The I/O cable is a 16-pin cable including power, analog input, negative/positive input and output.

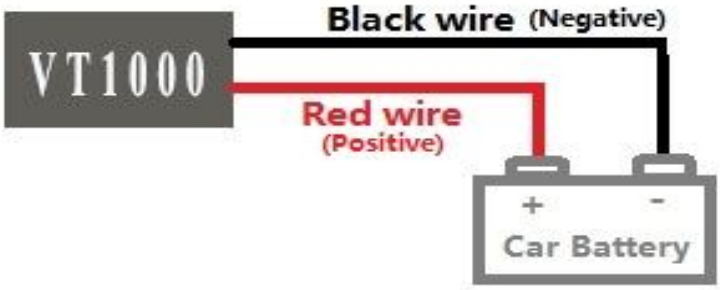


PIN Number	Color	Description
Input 1/SOS	White wire	Digital Input 1 (negative triggering), E.g. connect SOS panic button
Input 2	White wire	Digital Input 2 (negative triggering), E.g. detecting status of vehicle door on/off
Input 3	White wire	Digital Input 3 (negative triggering)
Input 4	White wire	Digital Input 4 (positive triggering), e.g. detecting the ACC
Input 5	White wire	Digital Input 5 (positive triggering)
AD 1	Blue wire	10 bits Resolution Analog Inputs. 0-6V DC Detection. It can be used to connect with temperature/fuel sensor etc.
AD 3	Blue wire	10 bits Resolution Analog Inputs. 0-6V DC Detection. It can be used to connect with temperature/fuel sensor etc.
Output 1	Yellow wire	Output1. It can be used to connect with relay for engine immobilization.

Output 2	Yellow wire	
Output 3	Yellow wire	E.g. connected with siren
Output 4	Yellow wire	E.g. Unlocked car door
Output 5	Yellow wire	E.g. Lock car door
AD2	Blue	10 bits Resolution Analog Inputs. 0-6V DC Detection. It can be used to connect with temperature/fuel sensor etc.
AD4	Blue	10 bits Resolution Analog Inputs. 0-6V DC Detection. It can be used to connect with temperature/fuel sensor etc.
GND	Black	Ground, Negative
POWER	Red	DC in (power source). Input voltage: 9V-36V, 12V suggested.

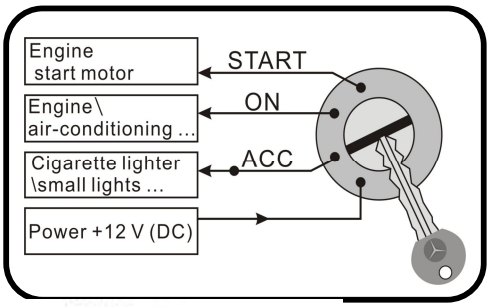
7.2 Power/GND

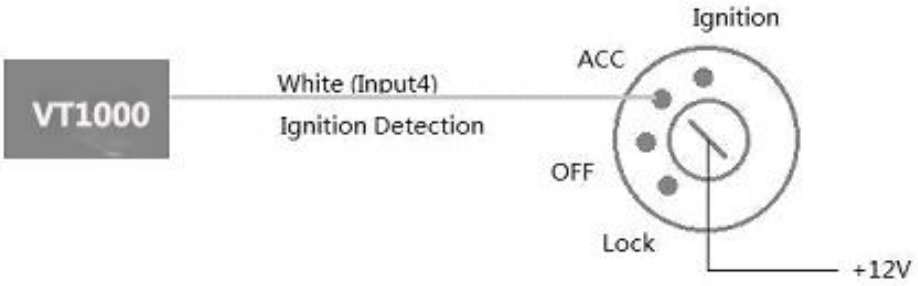
Connect GND (Black) and power(Red) wires to the battery of vehicle.



7.3 Digital Input

Example: Detecting vehicle engine on/off status





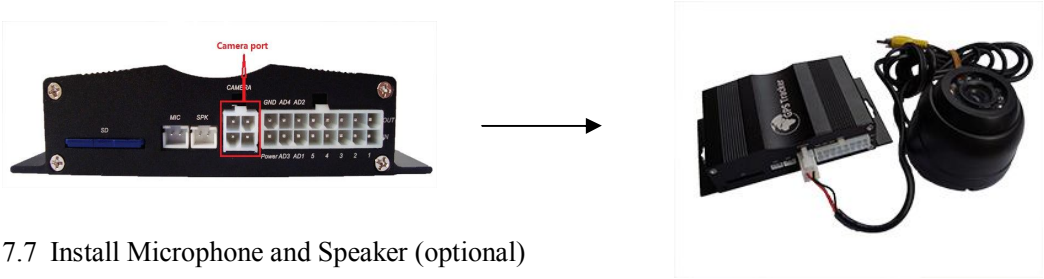
7.4 Output

Example: Control fuel-cut

7.5 Install GPS/GSM Antenna

Note: Do not shield or cover the GPS Antenna with any objects containing metal.

7.6 Install Camera (optional) (More specific details refer to Appendix 4)



7.7 Install Microphone and Speaker (optional)

8. Basic SMS Commands:

Note:

①The default password is 000000, you should change the password when use the device.

Change user's password: W000000,001,******

(000000 is old password; ******is new password)

② Command Letter must be capitalized.

8.1 Position Report

Description: To know the position of your car, send an SMS or make a telephone call directly to the device and you will receive an SMS with its location and other information.

Command: W000000,000

For example:

Send SMS: W000000,000

Received SMS as below picture:

Another easier way is call the device's phone,

After ring for a while hang up the phone, then

You will receive a position SMS by the device.

Item	Description
ID: 1234567890	The tracker's ID number
	The engine is turned off
Latitude=23 08 57.58N, Longitude=113 18 59.31E	Latitude and longitude information, "N" in latitude means North; "E" in longitude means East.
Speed=0.00Km/h	Speed information
Odometer=0.013km/h	Odometer information
2012-09-23,11:22	Date and time

You can copy this coordinate get from the SMS into *http//:maps.google.com* and see its location as picture:

8.2 Set receiving physical address name via SMS

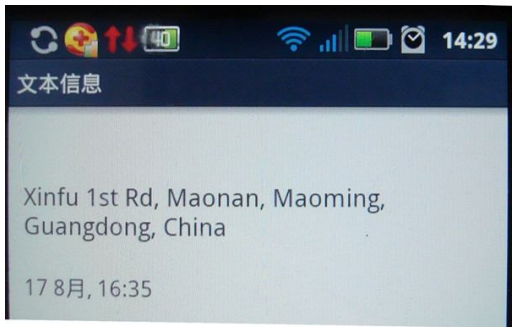
Description: To know specific address of device, send an SMS and you receive an SMS with its location physical address name.

Command: W000000,111

Example: SMS send: W000000,111

Then you will receive an SMS as below picture:

(Note: This function need support of the GPRS01 or SMS01 tracking platform, address SMS will be received in text format.)



8.3 Get Google Map's Link via SMS

Description: You will get a Google map URL after sent the command, click the URL, then the location can be shown directly on Google maps on your mobile phone.

Command: W000000,100

For example: Send SMS: W000000,100

Then you will get the SMS as below picture:

Note: By click the link, you can get the location in Google map from your mobile phone.

8.4 To cut off Engine, immobilize the vehicle

① Command: W000000,020,P,F

Description: P=1, means output1; P=2, means output2 ... P=5, means output5

F=0, to disable this output function; F=1, to enable this output function

SMS send: W000000,020,1,1

If the output1 is connect to oil-cut relay, this command is to enable the engine-cut function, the engine oil pump line will be cut-off to immobilize the vehicle.

While send W000000,020,1,0 is to restore the engine oil pump line and the vehicle can be started again.

8.5 Set over speed alarm

Command: W000000,005,XX

Description: XX(the speed preset value) XX=00, disable XX=[01<XX<20](unit:10Km)

Example:

SMS send: W000000,005,10

SMS receive: SET OK! SPEED LIMIT:100Km/h

Meaning: If your speed is over 100Km/h, an alarm SMS will send to your phone to warn you.

8.6 Oil leaking/Refuel Alarm

SMS command: W000000,094,X

Description: X = 000~199(unit: second), means for fuel capacity change exceed preset value in the time interval X, it will send out oil leaking or fueling alarm, send alarm data to tracking platform, the leaking protocol number is 0x74, the fueling protocol number is 0x76. And if X is less than or equal to 5 seconds, then the function will be disabled. System default value is 10

seconds.

8.7 Enable Impact Alarm Function:
SMS command: W<password>,028.1
Meaning: If the vehicle impact, an alarm SMS will send to your phone to warn you
Disable Impact alarm function:
SMS command: w<password>,028,0
When sending out impact alarm, alarm data will be sent to platform, alarm code is 0x14
System's default setting is disable function of impact alarm

8.8 Two way communication Function:
SMS Command: W<password>,050,AB
A=1, means open auto-answer function; A=0, means the function is close; the system's default is A=0
B=1, means Open the horn sound, B=0, means the horn sound is close, the system's default is B=0
For example:
SMS send: W000000,050,11
Meaning: Two way communication function is open.

8.9 SD Card
It use to store pictures, max 64G, can store more than 800,0000 pictures.
When snap picture one time, it will store on SD card, it also upload the picture to platform at the same time.

Note: More SMS Commands, please check Appendix 2: Command List

9. VT1000 Packing and Accessories

Accessories	QTY	IMAGE	FUNCTION
Main unit	1 piece		VT1000's function
GSM Antenna	1 piece		Receiving GSM network signal
GPS Antenna	1 piece		Receiving satellite locating signal data

Relay	1 piece		To cut-off/restore the power/fuel supply
16 PIN wire	1 piece		Mainly used to connect to the vehicle
Microphone	1 piece		Voice monitoring

10. Optional Accessories

Optional Accessories	Image	Function
Active RFID Kits		anti-theft and driver(student) ID identification function
Passive RFID Kits		anti-theft and driver(student) ID identification function
Temperature Sensor		Temperature monitoring
Fuel Sensor		Fuel Monitoring
Siren		When trigger alarm, it will alarm sound loudly.

SD Card		Store pictures, max 64G, can store more than 800,0000 pictures.
Camera		Snap photos, when trigger alarm, it will auto snap photo.
Speaker		
Configure USB cable	 USB configure cable	Configure tracker's parameter Upgrading the tracker's firmware

11. Troubleshooting

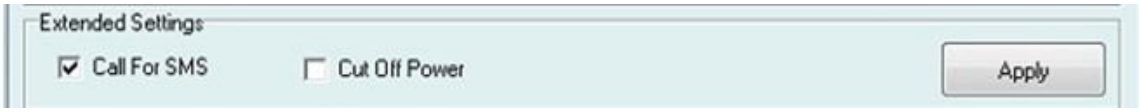
Problem: Unit will not turn on	
Possible Cause:	Resolution:
Wiring was not connected properly	Check and make sure wiring connection is in order.
Battery needs charging	Recharge battery
Problem: Unit will not respond to SMS	
Possible Cause:	Resolution:
GSM antenna was not installed properly	Make VT1000 connected to GSM network.
GSM Network is slow	Wait for SMS. Some GSM networks slow down during peak times or when they have equipment problems.
Unit is sleeping	Cancel sleeping mode
Wrong password in your SMS	Insert the correct password
The SIM in VT1000 has run out of credit	Replace or top up the SIM card
No SIM card	Insert working SIM card. Check in phone that the SIM can send SMS messages.
SIM card has expired	Check in phone that the SIM can send SMS messages. Replace SIM card if needed.

SIM has PIN code set	Remove PIN code by inserting SIM in you phone and deleting the code
SIM is warped or damaged	Inspect SIM, clean the contacts. If re-inserting does not help try another to see if it will work.
Roaming not enabled	If you are in a different country your SIM account must have roaming enabled
Battery is low	Recharge the unit and the GSM will start working.
Problem: SMS from VT1000 states 'Last……'	
Possible Cause:	Resolution:
Unit does not have clear view of the sky	Move the antenna of the unit to a location where the sky is visible.
VT1000 is in an inner place	Wait for the target to come out

Appendix 1 Configure by computer

Item	Description
SMS tracking No. Interval	To put a mobile phone number for automatic tracking by SMS at certain time interval in minutes
Password	To set SMS command password, the default is 000000,
Over Speed	To set speed limit for over speed alarm
Prefix(area code)	To set country code
Time Zone	To set time zone, GMT*60 (minutes), if in west half western hemisphere, "-" is necessary to put ahead
Wiretapping	To set wiretapping mobile phone number
Distance	To set track and upload data by certain distance in meters
Power Saving	To set time enter into standby mode when shaking not detected to save power and GPRS data traffic
Course	To set upload data via angle shifting by certain angles

SOS Button/IN1	To customize the reply SMS text when SOS Button/Input1 triggered
Button B/IN2	To customize the reply SMS text when Button B/Input 2 triggered
Button C/IN3	To customize the reply SMS text when Button C/Input 3 triggered



Call for SMS	Tick it to reply SMS when calling in
Cut off Power	Tick it to send alert when the external power be cut off

Appendix 2: Command List

Description	Command	Remarks
Get current location	W******,000	Get current location of VT1000
Get location in Google map URL format via SMS	W******,100	http://maps.google.com/maps?f=q&hl=en&q=22.542563,114.077971&ie=UTF8&z=16&iwloc=addr&om=1
Change user's password	W******,001,######	****** is old password ###### is new password
Set interval for automatic timed reports	W******,002,XXX	XXX is the interval in minute. If XXX=000 it will stop tracking
Set preset phone number for SOS button	W******,003,F,P,T1,T2	F=0, to disable this function; F=1, only sending SMS; F=2, only calling preset phone number; F=3, both SMS and calling (default) P is the button number and should be 1,or 2, or 3. If SOS button is linked to IN1, then P=1. T: Preset phone number (T must be less than 16 digits) T1: When no T2, T1 for short message number or dial the number; when have T2, T1 for message number.

		T2: for dial the number.
Set over speed alarm When VT1000 speeds higher than the preset value, it will send one over speed alarm SMS to the SOS preset number.	W******,005,XX	XX (the speed preset value) =00 , disable =[01<XX<20] (unit: 10Km)
Set Geo-fence alarm (foursquare) When the VT1000 moves out of preset scope, it will send one Geo-fence SMS to the SOS preset number.	W******,006,XX	XX (set distance from current central point place) =00, disable =01, 30m =02, 50m =03, 100m =04, 200m =05, 300m =06, 500m =07, 1000m =08, 2000m
Extend Settings	W******,008,ABCDEFGHIJ###	A=0, disable position report function when a call is made to VT1000 A=1, enable position report function to get position SMS by Calling VT1000 I=0, disable power failure alert I=1, enable power failure alert The functions of BCDEFGHJ are remained for furthur use. ### is the ending character.
Set Geo-fence alarm 017 command is for alarm when tracker moves out the preset scope; 117 command is for alarm when tracker moves in. When the tracker moves in or out, it will send an SMS alarm to the	W******,017,data W******,117,data	data is the coordinates which include: Lower-left X, Lower-left Y,Upper-right X,Upper-right Y For example, 11404.0000,E,2232.0010,N,11505.1234,E,2333.5678,N Note: 1. Lower-left X,Y (longitude and latitude) should be smaller than Upper-right X,Y; 2. All longitudes and latitudes should be in ASCII format as follows:- Longitude: DDDMM.MMMM,E/W. 4 places of decimal. ‘0’ is needed to be stuffed if no

authorized phone number for SOS.		value available. Latitude: DDMM.MMMM,N/S. 4 places of decimal. '0' is needed to be stuffed if no value available; 3. Send W******,017 or W******,117 without data to disable this function.

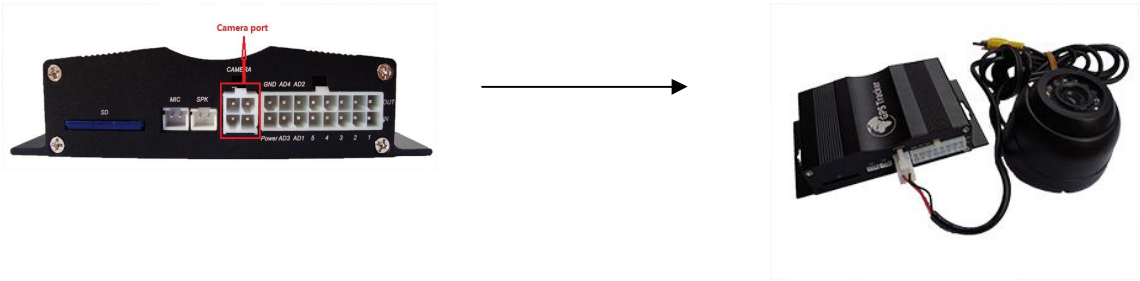
Presetting by SMS for GPRS tracking		
Set ID for VT1000 by SMS	W******,010,ID	Tracker ID must be less than 14 digits
Set APN by SMS	W******,011,APN,APN Name, APN Password	APN Name, APN Password If no password required, just insert APN name only; APN defaulted as 'CMNET'; APN name + password not over 39 characters.
Set IP Address and Port by SMS	W******,012,IP, Port	IP: xxx.xxx.xxx.xxx Port: [1,65536]
Enable GPRS Function	W******,013,X	X=0, close GPRS (default); X=1, enable TCP X=2, enable UDP
Set Time Interval for Sending GPRS Packet	W******,014,XXXXX	XXXXX should be in five digitals and in unit of 10 seconds. XXXXX=00000,to disable this function; XXXXX=00001~65535, time interval for sending GPRS packet and in unit of 10 seconds.
Output Control	W******,020,P,F	P =1, Out1 =2, Out2 =3, Out3 =4, Out4 =5, Out5 F =0, to disable the output =1, to enable the output
Output Control (Safe mode) This function is achievable when the speed is below	W******,120,ABCDE	ABCDE represents Out1, Out2, Out3, Out4, Out5 respectively. If A or B or C or D or E,

10km/h and GPS is available.		=0, to disable the output =1, to enable the output =2, to remain previous status
Set power saving mode when VT1000 is still (In power saving mode, GPS stops working. GSM enters standby mode and stop sending out message until it is activated by an SMS or an incoming call)	W******,026,XX	XX=00, to disable this function XX=01~99, to set this function. It is in unit of minute. Example: If XX=10, VT1000 will enter power saving mode in 10 minutes after it is immobile.
Set phone number for wiretapping	W******,030,T	T is the telephone number for wiretapping and max. 16 digits
Set time zone difference	W******,032,T	T=0, to disable this function T=[1, 65535] to set time difference in minutes to GMT. Default value is GMT +, not necessary for those ahead of GMT. For example, either +120 or 120 is acceptable. -, required for those behind GMT. For example, -120.
Set character for SOS alert message	W******,033,P,Char	Char P is the button number. P=1, 2, or 3. Char is the character in SOS message and max 32 characters
Set tracking by driving angle change function	W******,036,Degree	Measured by Degree(s), Degree=0,disable this function；X=1-359，means set angle degree interval in this function.
Set tracking by distance function	W******,045,X	Measured by Meter(s), X=0, disable this function； X=1—65535 ， means the distance interval in this function.

Set clear/reset odometer function	W******,046	To clear and reset odometer information to zero.
Set function of receiving location physical address name via SMS	W******,111	This function need support of the GPRS01 or SMS01 tracking platform, address SMS will be received in text format.
Get version and serial number	W******,600	To get version and serial number of current firmware
Get IMEI No.	W******,601	To get device IMEI No.
Reboot GPS and GSM Module	W******,900###	### is the ending character.
Initialization To turn all the parameters / settings (except for the password) to factory default.	W******,990,099###	### is the ending character.
Password Initialization	W888888,999,666	This command will reset the current password to factory default password 000000

Appendix 3: How to use Camera

1. Install camera



2. Take photo when trigger alarm

2.1 Send SMS commands to set take photos:

Description	Command	Remarks
		A : Snap or not when IN1 alert triggered, A=1 means snap, A=0 means no action B : Snap or not when IN2 alert triggered, B=1 means snap,B=0 means no action C: Snap or not when IN3 alert triggered, C=1 means snap, C=0 means no action D: Snap or not when IN4 alert triggered, D=1 means snap,D=0 means no action E: Snap or not when IN5 alert triggered, E=1

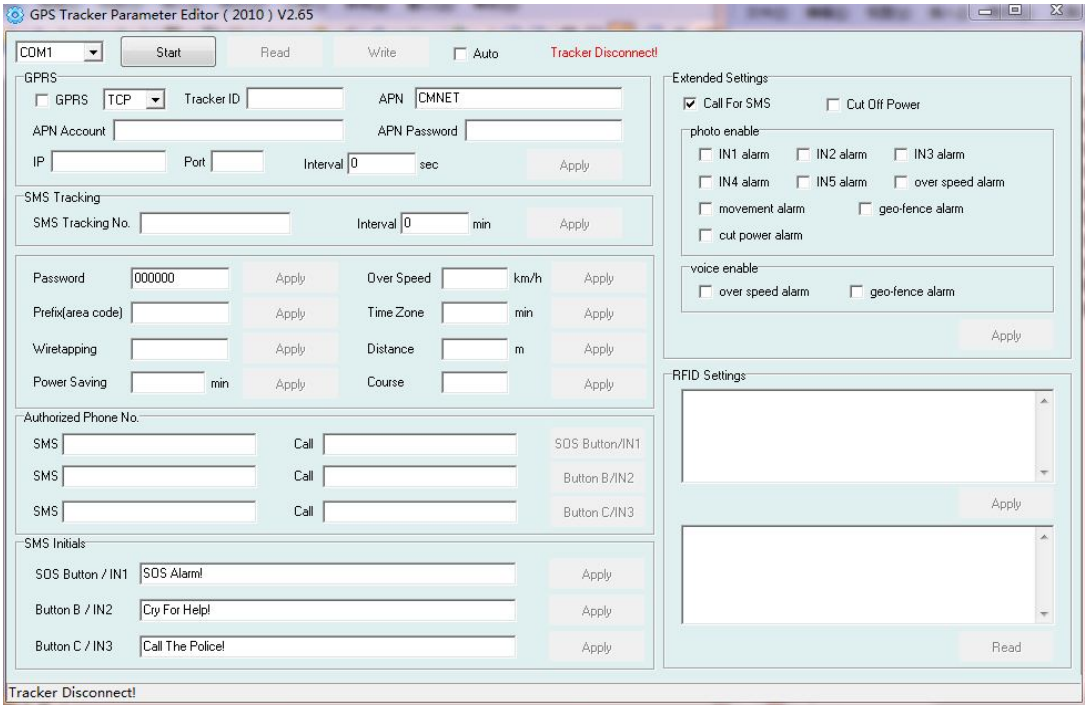
Configure SMS for the extended photoing parameters	**W<password>,108,ABCDEFGHIJ###** Example: W000000,108,1000000000### It means when In1 (SOS) alarm triggered, it will automatic snap.	means snap, E=0 means no action F: Snap or not when over speed alarm triggered, F=1 means snap, F=0 means no action G: Snap or not when movement alarm triggered, G=1 means snap, G=0 means no actions H: Snap or not when Geo-fencing alarm triggered, H=1 means snap, H=0 means no actions I: Snap or not when power fail alert triggered, I=1 means snap, I=0 means no actions J: Snap or not when Oil/fuel leakage alarm triggered, J=1 means snap, J=0 means no actions The system all default is 0 , no actions.
By send SMS to Roll call take photos:	**W<password>,051**	

Camera failure alarm: when cannot snap photo, it will send SMS " CAMERA ERROR ALARM!" to SOS number, and send alarm data to platform as well.

(You can check photos on platform, Report Centre)

2.2 Configure tracker to set take photos

Open GPS tracker parameter editor (2010) V2.65 (following picture)

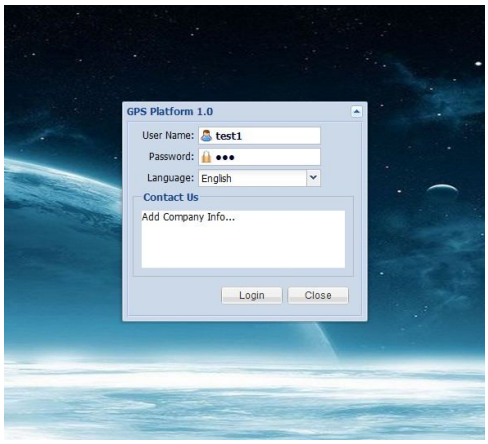


In photo enable option, choose you want to select the function.

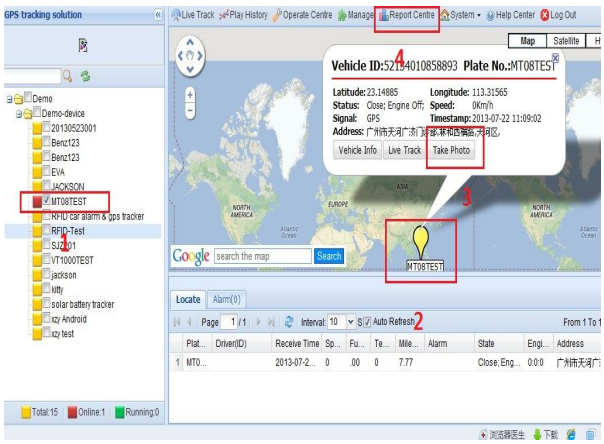
Such as select IN1 alarm, means when trigger IN1 alarm (SOS alarm), tracker will automatic snap photo.

2.3 On the platform applications

Into our GPS Tracking Platform: **http;//www.global-track.net** , (following picture P1)，login interface，(following picture P2)

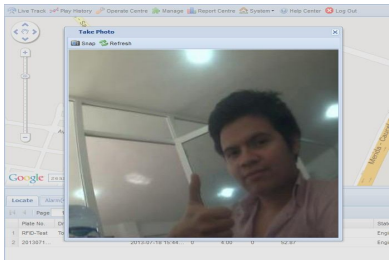


P1

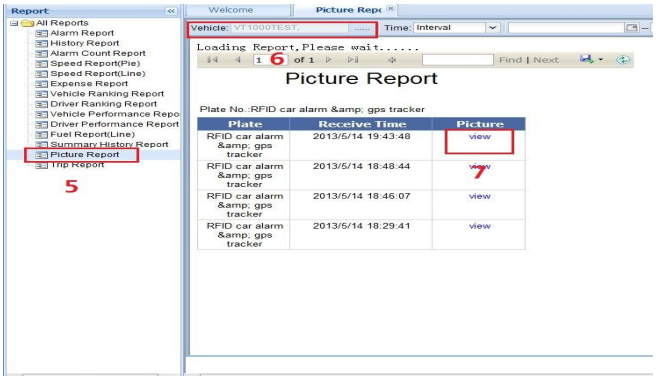


P2

Select your device, such as instructed 1; it will display your car's the logo on the map(instructed). Put the mouse on the logo, It will automatically pop up frame (instructed 3),you can click the "Take Photo" in the options (instructed 3),then it will taking photo down (following picture P3).If you want to see photos record, please click "Report Centre"(instructed 4),then The Report interface will pop up;（following picture P4）



P3



P4

In Reports options, there is a Picture Report, click it (instructed5), then it will display "Picture Report" interface. Choose you want to choose the vehicle (instructed6), wait for few seconds, it will display the Picture Report, click "view", Will see you want to see pictures（instructed 7）

Appendix 4: Configure and use of RFID function

RFID Reader

RFID Tag

1. Install RFID as following:

2. How to use

2.1 SMS Commands

2.1.1 Firstly, enable the RFID:

(1) Enable the RFID function：**W000000,062,1**

(2) Disable the RFID function: **W000000,062,0**

(3) The system default is RFID function enabled.

(4) When send the disarming SMS command"000000DSM", it will automatic disable the RFID function, and if send the enable SMS command the RFID function will be restored.

2.1.2 Secondly To configure authorized RFID tag by SMS commands

W<password>,060,ID1

W<password>,160,ID2

W<password>,260,ID3

W<password>,360,ID4

W<password>,460,ID5

Note: The default password is **000000**

ID1, ID2, ID3, ID4, ID5 means 5 digital FRID number.

For example: if configure NO.00412 as the authorized RFID tag, then send SMS:

W000000,060,00412

Tracker will reply SMS "STUDY ID OK: 1:00412; 2:00000; 3:00000; 4:00000; 5:00000", means the 1st RFID tag number is 00412, the 2nd , 3rd, 4th, 5th RFID tag not set. If the RFID tag is detected at this time, tracker will send SMS "NOW ID : 00412 " .

Note: RFID reader detecting test RFID tag distance is within 5 meters, the RFID tag must be detected before RFID can be used.

2.1.3 The ARMING SMS command: "<password>ARM "

The disarming SMS command "<password>DSM ",

When send the disarming SMS command "000000DSM", it will automatic disable the

RFID function, and if send the enable SMS command the RFID function will be restored.

2.1.4 Judge if need to cut off oil/fuel supply when the ignition alert occurs to stop engine start.

Enable function of cutting off oil-way when illegally ignite under ARM status

SMS command: **W<password>,061,1**

Disable function of cutting off oil-way when illegally ignite under ARM status

SMS command: **W<password>,061,0**

The system default setting is disable function of cutting off oil-way when illegally igniting under ARM status.

3. Command List

Description	Command	Reply SMS
Configure authorized RFID tag	**W<password>,060,num1** **W<password>,160,num2** **W<password>,260,num3** **W<password>,360,num4** **W<password>,460,num5**	STUDY ID OK: 1:num1; 2:num2; 3:num3; 4:num4; 5:num5
Enable the RFID detection	**W<password>,062,1**	ENABLE OK !
Disable the RFID detection	**W<password>,062,0**	DISABLE OK !
Arm	**<password>ARM**	Vehicle is armed!
Disarm	**<password>DSM**	
Enable function of cutting off oil-way when illegally ignite under ARM status	**W<password>,061,1**	System default setting is disable function of cutting off oil-way when illegally ignite under ARM status.
Disable function of cutting off oil-way when illegally ignite under ARM status	**W<password>,061,0**	

4. Functions

4.1 To ignite in Armed status, it will check the RFID tag. If an authorized tag can be detected, it will not alert. If an authorized tag can not be detected, it will send alert SMS “Engine Is On !” to three authorized alert mobile phone numbers, and at the same time, the Output 3 will control siren to sound, and call the three mobile phones at one minute interval, and decide to cut off the oil/fuel supply according to its oil cut enable/disable status.

4.2 If vehicle door is opened in armed status, it will check the RFID tag. If an authorized tag can be detected, it will not alert; if an authorized tag can not be detected, it will send alert SMS “Door Is Open !” to three authorized alert mobile phone numbers, and the Output 3 will control the siren to sound, and call the three mobile phone numbers at one minute interval.

4.3 If the vehicle is moved/towed in armed status, it will detect the RFID tag, if no authorized tag be detected, it will send alert SMS ”Movement alarm!” to the 1st alert mobile phone number.

4.4 In disarmed status, if no authorized RFID tag Is detected for successive 30 seconds, then the system will automatically arm the vehicle, and it will call the 1st alert mobile phone number, after

several rings and hang off automatically, indicating the vehicle be armed.

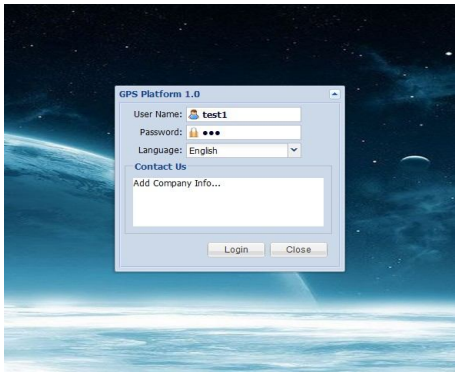
4.5 If alert be triggered, the siren will sound for 10 seconds and shut or immediately shut when disarm action is detected.

4.6 If illegal ignition be detected and oil/fuel supply cut off enabled, then the oil/fuel supply will be cut off, and it will be immediately restored as soon as disarm action be detected.

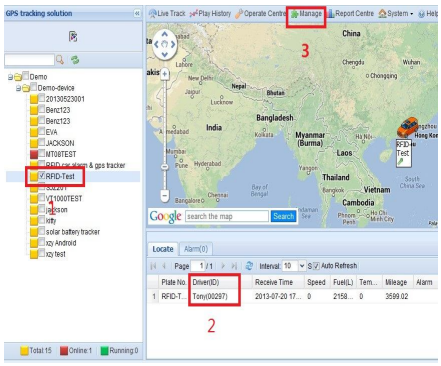
4.7 If the oil/fuel supply is cut off by SMS or GPRS platform, it can not be restored by disarm action.

5. RFID on the platform applications

5.1 Into our GPS Tracking Platform: **http;//www.global-track.net,** as following picture P1，login interface, as following picture P2



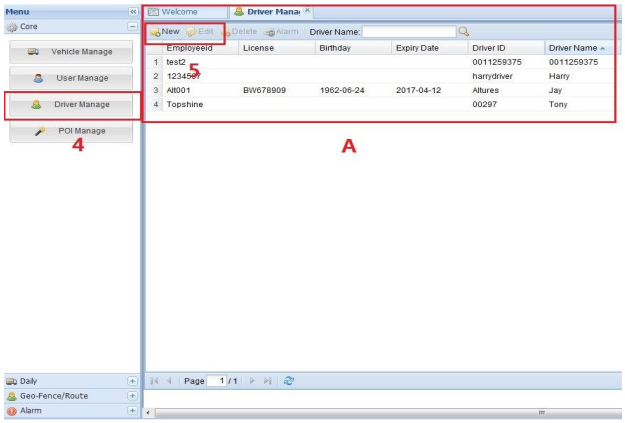
P1



P2

5.2 Select your device, such as instructed 1；it will display your car's the current information, Driver (ID) means the driver and his/her RFID tag number such as instructed 2；

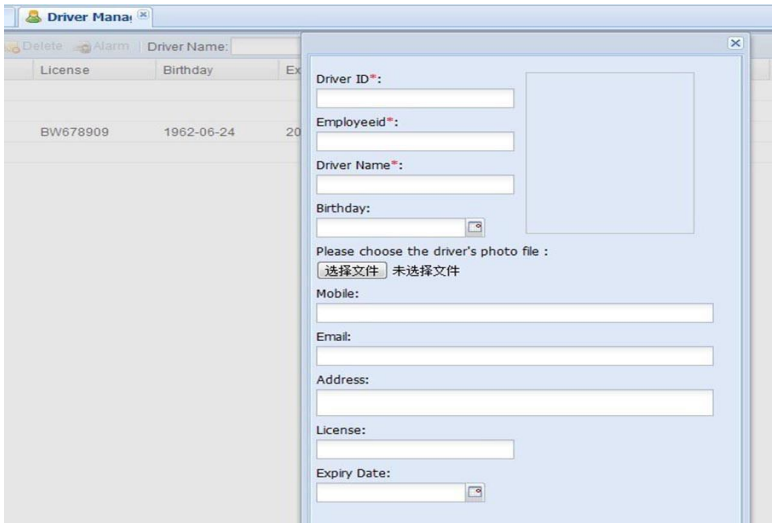
5.3 If you want to edit the driver information, please click "manage" ， such as instructed 3, then interface will into as following picture P3;



P3

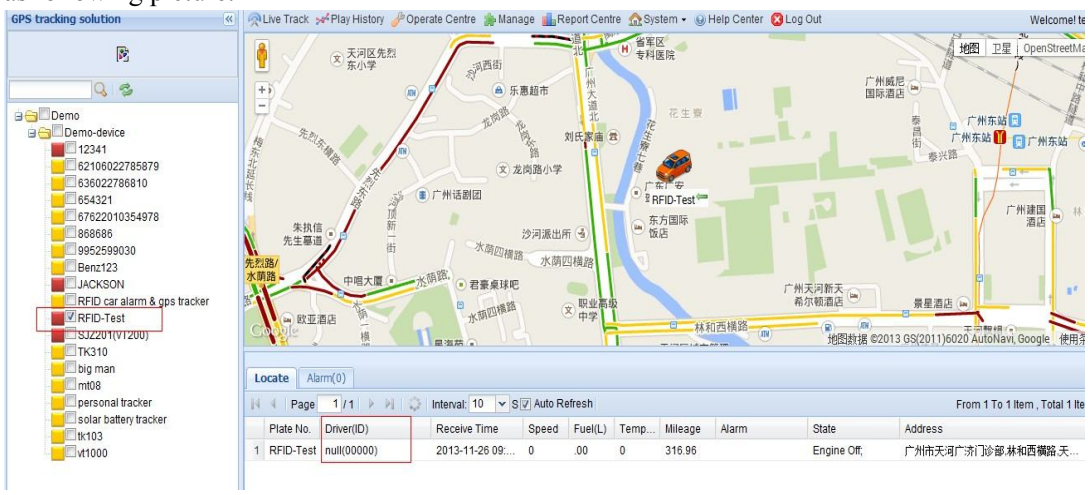
5.4 Click Driver Manage , such as instructed 4；it will open such as instructed A；

You can click New, such as instructed 5, open as following picture P4; to add tag ID and the driver's information etc.



When finished, please press "save" button.

Once again into the main interface, select the little red box, you will see the tracker location. Such as following picture:



Appendix 5: Fuel Sensor Installation and Function

1. Installation instruction

1.1 Installation flow chart:

1.2 Operation procedures:

1.2.1 Find the position

Generally installed in the middle of the fuel tank, to avoid the original fuel floater

1.2.2 Clean the oil stain on the installation position

Clean the oil stain on the installation position

1.2.3 Holing

Use hand-drill with a 42mm metal drill bit, connect the power supply and drill in the position (Note: please do not drill too fast, stop when it is about to drop, then use the screwdriver and sharp-nose plier to remove the attached metal scraps to prevent them dropping into the tank). **Special note: Make sure to open the fuel tank cap before drilling; it's better to drain away all diesel, if not, just make sure not too full in the tank.**

1.2.4 Cleaning work

Use the grater to polish the rough selvedge;

Use a rope-tied magnet to adsorb the iron scraps.

1.3 Flange installation

1.3.1 Put the gasket under the flange and holing, then tighten with screws.

1.3.2 Put sealing ring

1.3.3 The sensor has two circle sealing rings, first fit the bigger ring and then the small one, fix them on the top of the sensor, see the flow chart.

1.3.4 Screw tighten the sensor

1.3.5 Put the sensor into the flange opening, and screw tighten along the screw thread direction, then wiring and wrapping.

1.3.6 Power supply of the fuel sensor

The sensor power voltage is 18-32VDC. Note: Do not connect the biggest power line in the vehicle, please connect the normal size power line, otherwise will burn the sensor.

1.4 Tools required

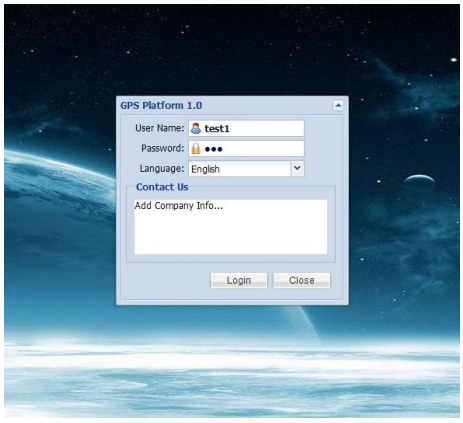
Tools: Hand-drill, Metal hole saw, Hex tapping screws (3cm)

Pistal Drill **Hole saw** **Hexagon self tapping screw**

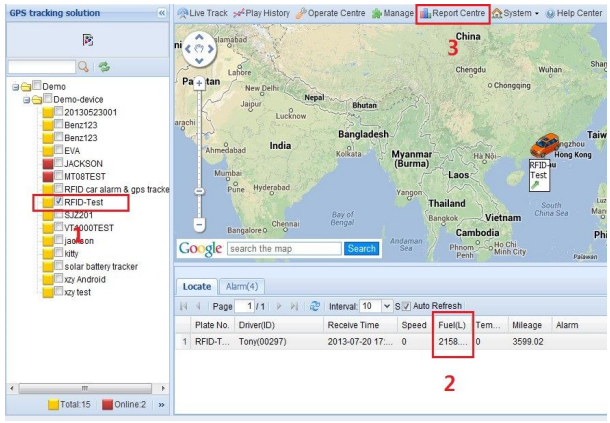
Extension cable of Fuel sensor: it's better wiring along the fuel tank, generally for a big vehicle, 9~10 m cable is enough and 5~8 m for a small vehicle; choose the 3-core, 0.75mm2 cable.

2 Fuel Sensor on the platform applications

2.1 Into our GPS Tracking Platform: **http;//www.global-track.net** , as following picture P1，login interface，(as following picture P2)



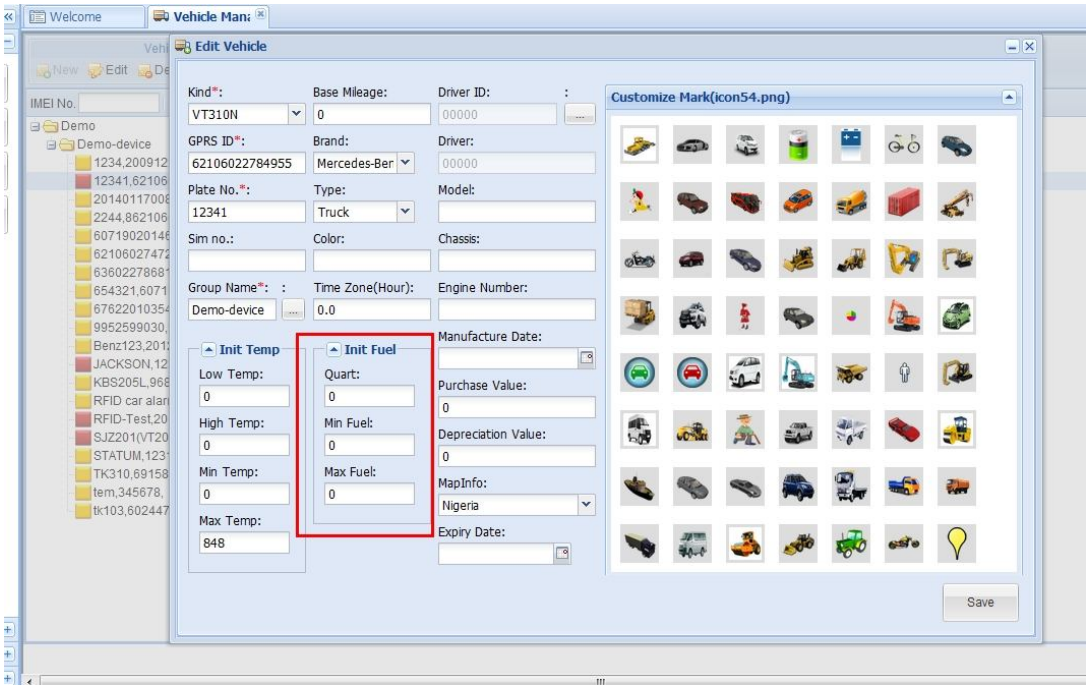
P1 P2



P2

2.2 Register on platform

2.2.1 Don't write anything in "Init Fuel", like follow picture 1:

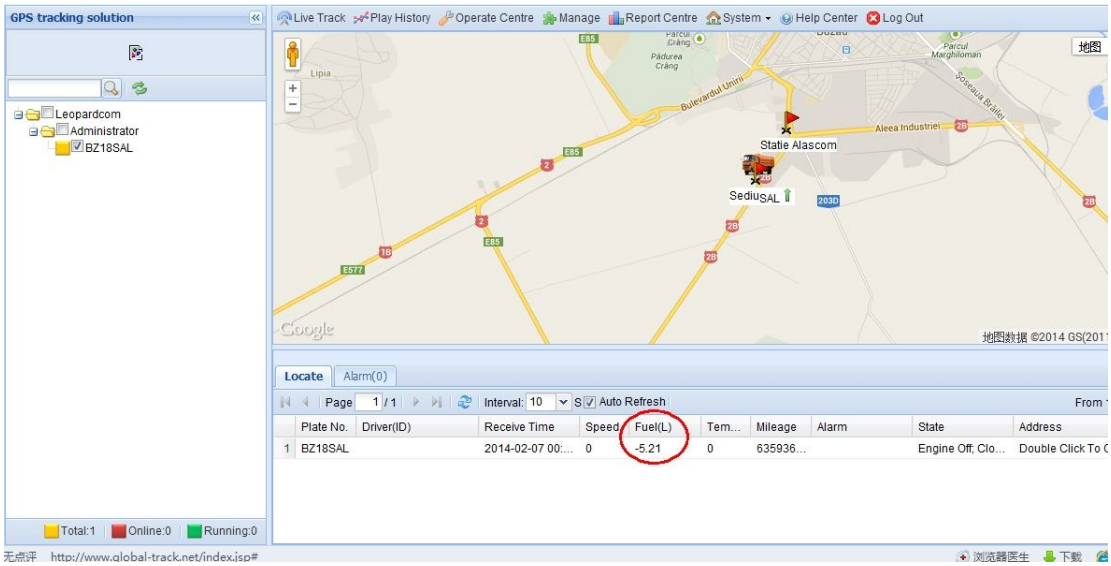


Picture 1

2.2.2. Like picture 2

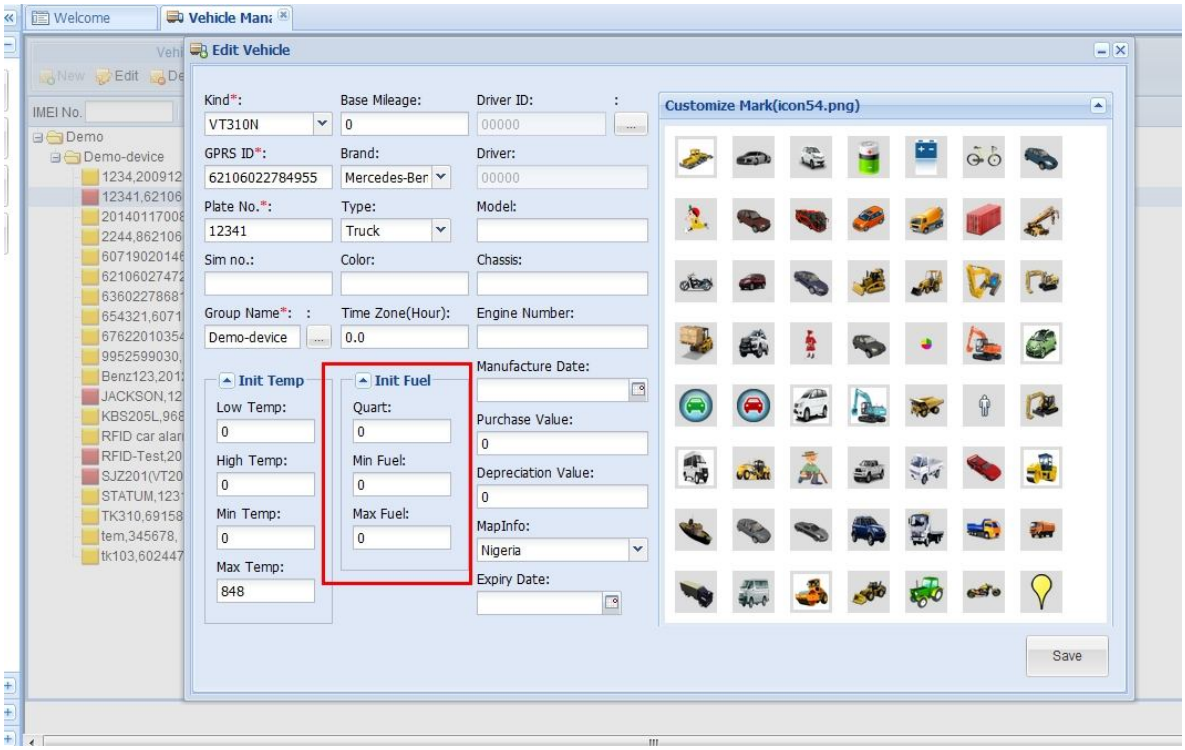
(1) Fill it up with fuel/oil in fuel tank. Let the tracker working. Then track the fuel(L) on platform: For example: the fuel(L) display: 603, this is Max Fuel, please write into “Max Fuel”.

(2) Empty the fuel/oil in fuel tank. Let the tracker working. Then track the fuel(L) on platform: For example: the fuel(L) display: 0, this is Min Fuel, please write into “Min Fuel”.



Picture 2

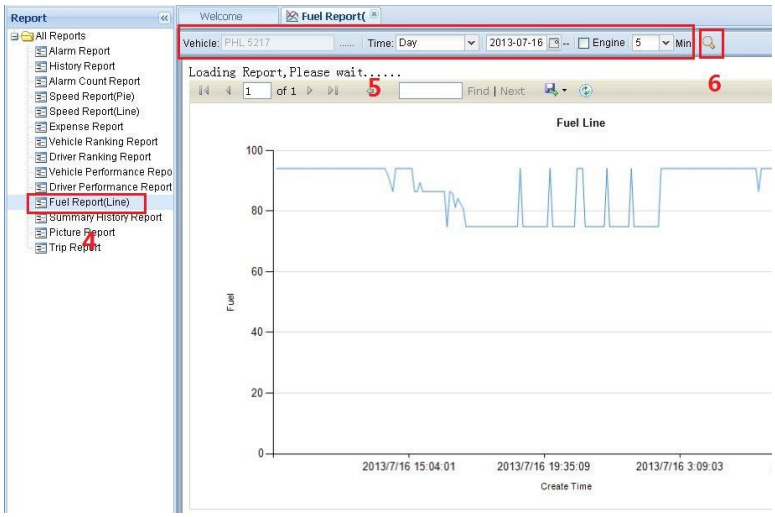
3. Write the vehicle’s fuel tank capacity into “Quart”



4. Click “Save”. Finish.

2.3 Select your device, such as instructed 1; it will display your car’s the current oil/Fuel (L) (instructed2).

2.4 If you want to see the history record chart. Please click “Report Centre”(instructed 3), then the Report interface will pop up; (following picture P3)



P3

2.5 In Report options, there is a Fuel Report (Line), click it (instructed 4), then it will display instructed 5, 6; you need choose “vehicle, Time or data etc.”, and click search (instructed 6), later

it will display “Fuel Line” chart.

You also can check History Report:

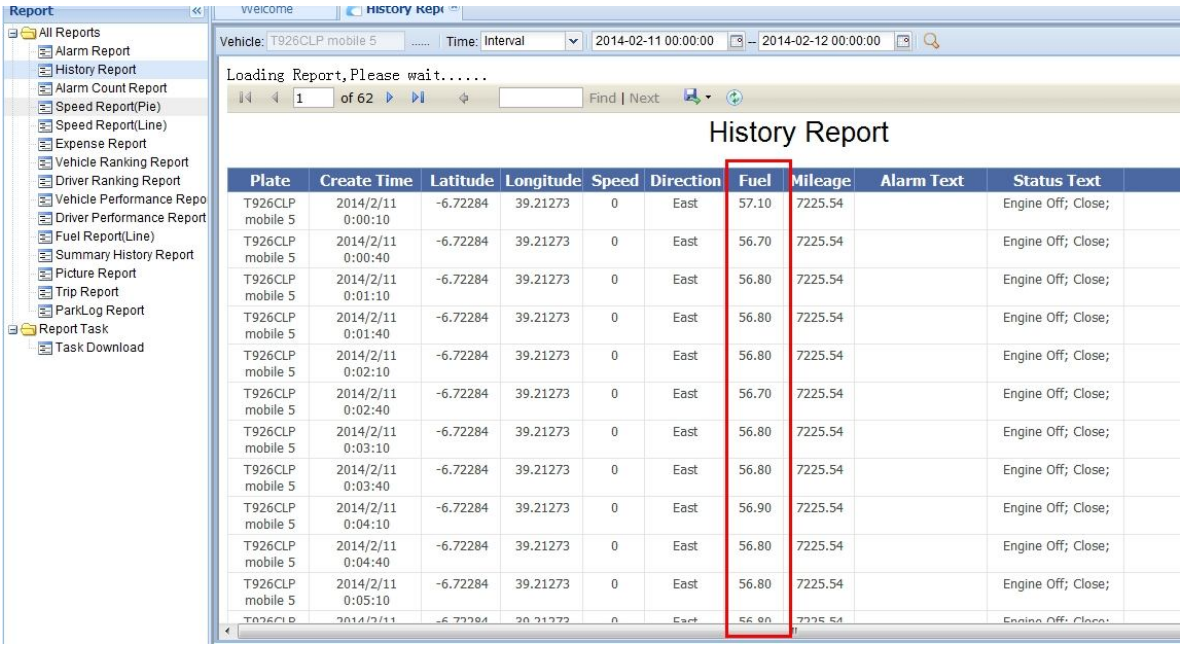


Plate	Create Time	Latitude	Longitude	Speed	Direction	Fuel	Mileage	Alarm Text	Status Text
T926CLP mobile 5	2014/2/11 0:00:10	-6.72284	39.21273	0	East	57.10	7225.54		Engine Off; Close;
T926CLP mobile 5	2014/2/11 0:00:40	-6.72284	39.21273	0	East	56.70	7225.54		Engine Off; Close;
T926CLP mobile 5	2014/2/11 0:01:10	-6.72284	39.21273	0	East	56.80	7225.54		Engine Off; Close;
T926CLP mobile 5	2014/2/11 0:01:40	-6.72284	39.21273	0	East	56.80	7225.54		Engine Off; Close;
T926CLP mobile 5	2014/2/11 0:02:10	-6.72284	39.21273	0	East	56.80	7225.54		Engine Off; Close;
T926CLP mobile 5	2014/2/11 0:02:40	-6.72284	39.21273	0	East	56.70	7225.54		Engine Off; Close;
T926CLP mobile 5	2014/2/11 0:03:10	-6.72284	39.21273	0	East	56.80	7225.54		Engine Off; Close;
T926CLP mobile 5	2014/2/11 0:03:40	-6.72284	39.21273	0	East	56.80	7225.54		Engine Off; Close;
T926CLP mobile 5	2014/2/11 0:04:10	-6.72284	39.21273	0	East	56.90	7225.54		Engine Off; Close;
T926CLP mobile 5	2014/2/11 0:04:40	-6.72284	39.21273	0	East	56.80	7225.54		Engine Off; Close;
T926CLP mobile 5	2014/2/11 0:05:10	-6.72284	39.21273	0	East	56.80	7225.54		Engine Off; Close;