Electronic Throttle Vehicle Speed Limiter
YTWL_CA100F

Part 1:

1. Product Brief:

Vehicle speed limiter CA100F is an intelligent terminal equipment which can realize precise speed limiting for vehicles.　It is not only a speed limiter but also a GPS Tracker. Speed control precision is very high and the performance is reliable. It will not affect the big throttle start nor the power torque, stable and reliable. It only limits the maximum speed and the vehicle will not stall during speed limiting, and ensure the throttle pedal free movement in the right speed range.

Above is the front view of the GPS speed limiter

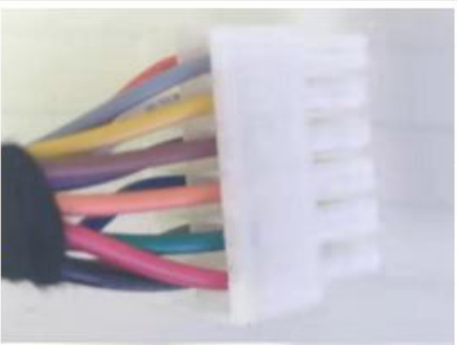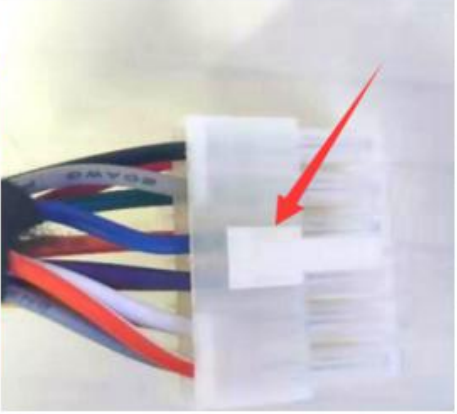# 1. The power line

1.1 The black head line

	1	2		
green	3	4	blue	
	5	6		
	7	8	white	
yellow	9	10	brown	
		12	black	

3	green line		accelerator voltage 1, near the accelerator pedal
4	blue		accelerator voltage 1, near the ECU
8	white		baked line for mechanical throttle control speed
9	yellow		accelerator voltage 2, near the accelerator pedal
10	brown		accelerator voltage 2, near ECU
12	black		baked line for GND

In general, only need to find two throttle lines and cut the throttle lines , then connect them separately (3 and 4) (9 and 10), other lines are not necessary

1.2 the white head line

white in Pink		1	2	black in gray
white		3	4	yellow
purple		5	6	Brown
blue		7	8	orange
gray		9	10	green
black		11	12	red

1	white in Pink	CAN L
2	black in gray	CAN H
3	white	Mechanical throttle
4	yellow	relay
5	purple	fuel sensor line
6	Brown	Buzzer −
7	blue	temperature sensor line
8	orange	Buzzer +
9	gray	Pulse line
10	green	ACC line
11	black	Ground wire
12	red	power 12V or 24V

Following lines are indispensable in installation:

6: Brown line
8: Orange line, the line of the buzzer
9: Gray line, pick up the pulse line of the original car, connect the pulse line speed limiter, the speed limit function will not have too much delay, use GPS signal speed limit, there will be a delay of about 2 seconds
10: ACC line
11: Power ground
12: Positive power supply

2. The install steps:

3.1 Find the vehicle accelerator pedal line harness at first, then find the two signal lines from the six lines with multi-meter test.
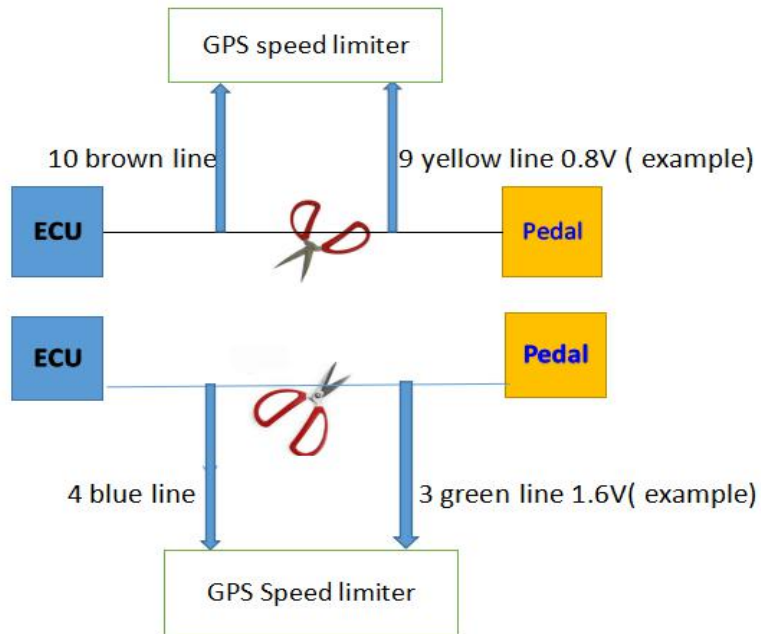There are six lines in the accelerator pedal interface, two power lines, two ground lines, and two signal lines. Start the vehicle, step on the accelerator pedal, let the vehicle in idle state, then the signal line voltage value will change, thus you can find the signal lines.
Please see the picture below
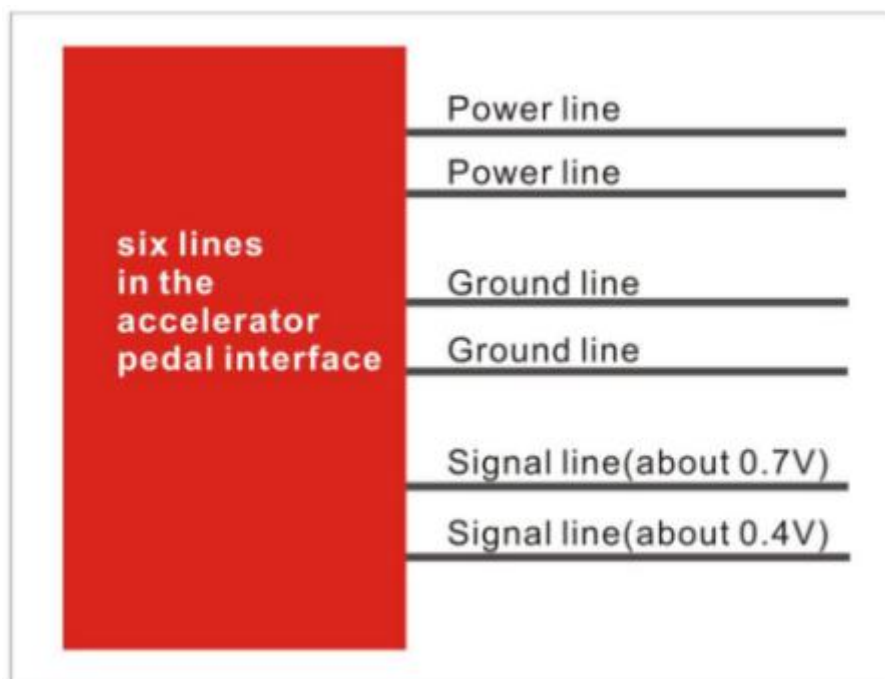
3.2 Cut the two signal lines, and then connect <10brown line+9yellow line> and <4blue line+3white line> to the signal lines respectively.
Please note that as shown in the figure following, 10brown and 4 blue line are connected to the part close to the ECU, 9 yellow and 3 white are connected close to the accelerator pedal.

GPS speed limiter

10 brown line   9 yellow line 0.8V (example)

ECU   Pedal

ECU   Pedal

4 blue line   3 green line 1.6V(example)

GPS Speed limiter

3.3 Find the speed pulse signal line of the car, connect to the 9 gray line of the GPS speed limiter, connect the speed pulse line, and the speed limit delay time is within 1 second.

3.3.1 How to find the car speed pulse line:

The principle is: when a voltage is applied to the pulse line, the speed pointer on the car dashboard will move, or the speed indicator of some cars will not move, but the odometer of the car will increase. Based on this principle, we designed a tool specifically for finding pulse lines: as shown below:

(**Please note** : some wires close to the ECU cannot be pierced with needles, and some dangerous wires cannot be pierced, because the detector has a voltage output of 5V-10V, which may burn out some circuits.)

Start the vehicle at idle speed, insert the tool into the cigarette lighter port, connect the tool's GND line to the car's GND line, and the line behind the instrument panel, you can use the needle on the tool to tie one by one. When the speed indicator needle will move, Or the car odometer will increase, so that you can determine that line is the original car speed pulse line

3.3.2 The main position of the speed pulse line is in the following sections:

A. Behind the dashboard

B. Audio host part

C. Gearbox output

D. Driving computer parts

E. ECU electric unit

3.4 Set the speed limit

3.4.1 How to set the speed limit value

After GPS SPEED LIMITER is installed completely, start the vehicle first. When the vehicle is idling, send a text message "STARTIDLE*123456", the device will automatically learn the idle voltage, and then return the learned idle voltage value to the mobile phone---- this is very important!

Then use the text message "SPEED*123456*040" to set the speed limit value,**(it's a example, by this command,you will set the car limit to speed at 40km/h)**first test it with GPS speed, and the speed limit function is normal.

3.4.2 How to calibrate the pulse coefficient

You can find the original car speed pulse line to be connected with the device's pulse line. Then you can make the car run at a constant speed of 30km/h, then press the button twice to calibrate the current pulse coefficient.

Please be noted with: same vehicles have the same pulse coefficient

The default pulse coefficient is 450.

If you already know the pulse coefficient of the vehicle, you can set it directly by SMS.

PULSE*123456*26 (Note: this command sets the pulse coefficient to 26)

And you can set the speed limit value from platform when device is online, as following picture：
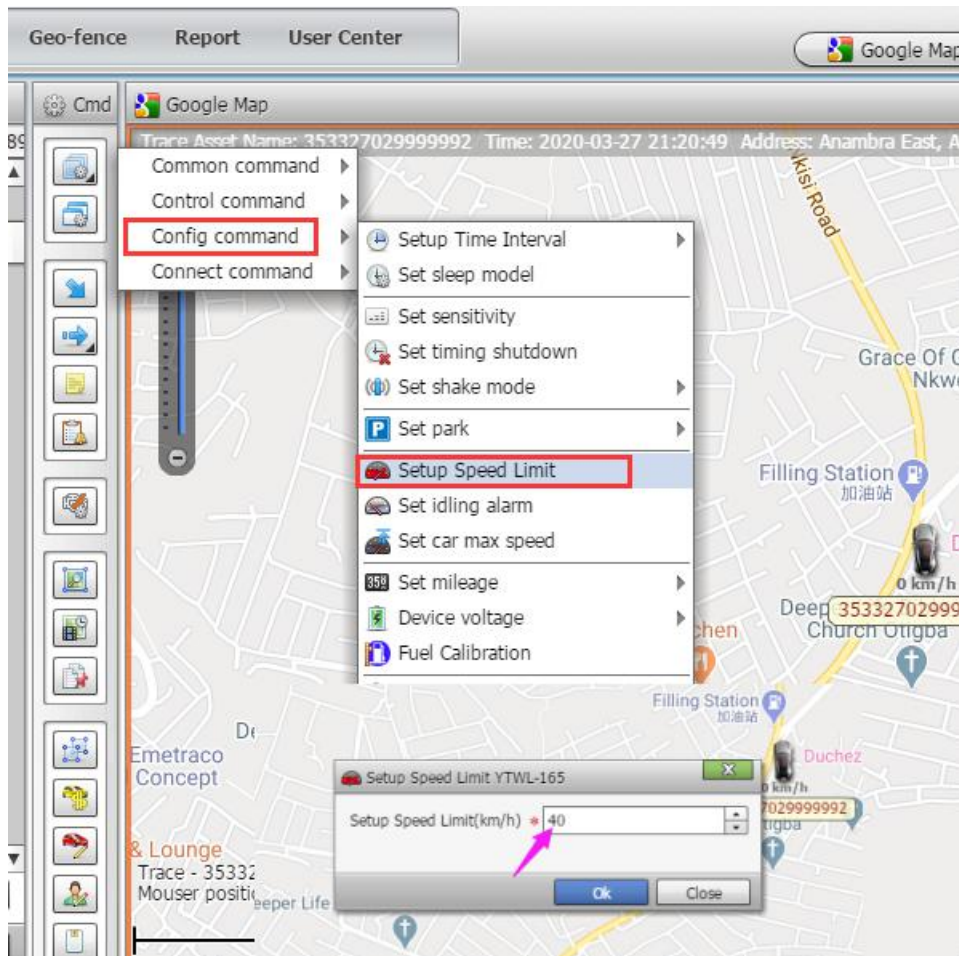
3.4.3 Download the data to U-disk:

Press and hold USB SWITCH for more than 3 seconds, all data will be downloaded to the U disk.

Besides, USB switch for other functions:

USB switch pressed continuously 2 times, it is automatic calibration pulse coefficient

USB switch presses continuously 3 times, it is connected to the Bluetooth printer to print data

3.4.4 Pulse speed showed on platform

From platform, you can see the speed limit value and the pulse speed value

3.5 For the Mechanical throttle, need add the relay.

3.5.1 Need use a relay, the signal wire of the relay is connected to the white wire (the end of the white port is marked with: mechanical throttle). When the speed exceeds the set speed, the throttle will be disconnected for 15 seconds, and after 15 seconds, the power

will supply Oil for 2.5 seconds, then disconnect fuel and refuel, until the speed drops below the set speed (this 15 seconds is not fixed, you can modify the oil cutoff time for different models, such as this command: oiltime*123456*5 (Modified the disconnection time to 5 seconds)
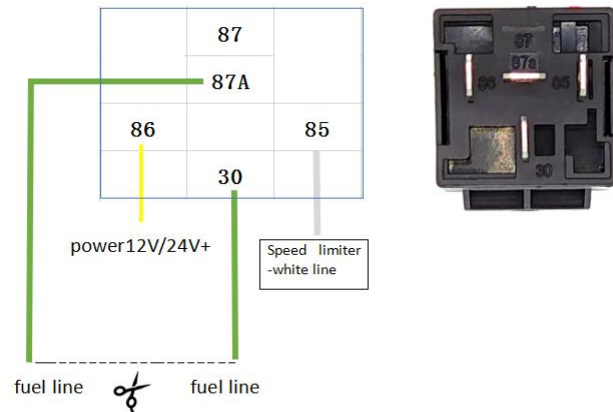
3.5.2 How to connect the relay
Relay have 4 lines:
87A and 30PIN are respectively connected to the two ends of the cut oil pump line
86 connects 12V or 24V power line in series
85PIN connects to the white line of the GPS speed limiter.

Note: Control the speed of the speed limiter with above way, the delay of the speed limit will be relatively large. For example, if the speed limit is set to 40km/h, the car can also run up to 50km/h during acceleration. So, find the car pulse speed line and calibrate the pulse speed, the delay will be much smaller.

For vehicles with mechanical throttle, if want to limit the speed without delay, need connect a solenoid valve and use a relay to control the solenoid valve to achieve the purpose of real-time speed limit.
Solenoid valve picture:

3.5.3 Installation method:

In principle, it is the same as installing a relay, but it is necessary to cut off the oil pipe of the oil pump, and then both ends of the oil pipe are connected to the two ends of the solenoid valve. In this way, when the vehicle with a mechanical throttle exceeds the speed limit value, it will disconnect the oil circuit When it is lower than the speed limit value, the oil circuit will be restored.

3.6 Yellow line 4 of speed limiter:

After the vehicle is stolen, send command to cut off the fuel of the car remotely, command is: cutoil*123456, and refuel command is: supplyoil*123456
Note: For this function, you must connect the relay to yellow line 4 of speed limiter.
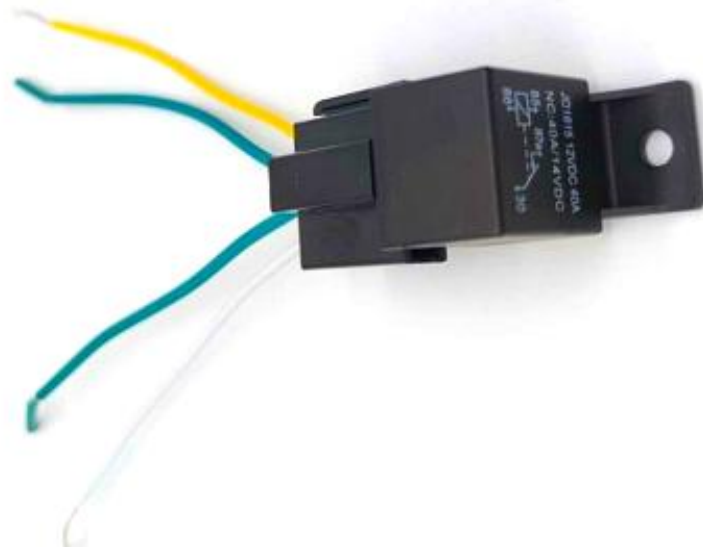
3.7 Limp mode testing

First, send command: **openpulse*123456** When cut off the car speed pulse line, the car will be limit to max speed is 30km/h, this speed will use the GPS speed.

When remove the whole white head connector, the car also will limit to 30km/h
Note: If it is a mechanical throttle car, the white wire of the BH (black head harness) must also be connected to the relay. When the WH (White head harness) is removed, the white wire will control the relay to limit the speed, and the black wire of BH also need to connect the GND of the car

4. LED indicator:

4.1 The red light is the power indicator. If it is steady, it indicates that the main power is on, and the off indicates that the main power is off.
4.2 Blue is the GPS indicator, always on indicates GPS positioning, and off means that GPS is not positioned.
4.3 Green is the system indicator. If it is steady, it indicates that the GSM network is not registered. Flashing indicates that the GSM network has been registered. Flashing twice indicates that GPRS is connected.

5. Key operation:

5.1 Press and hold for more than 3 seconds, the buzzer will sound and export data to the U disk.

5.2 Press the button 3 times continuously, the buzzer will sound and output data to the printer.

5.3 Press the button twice continuously, the buzzer sounds 2 times, and the current pulse coefficient is automatically calibrated.

6. Bluetooth printer:

Printer power light--Blue light if it is steady light indicates Bluetooth connection is normal, if blue light is off, Bluetooth is not connected

7. SMS commands:

1	FACTORY*123456	Setting back to factory default
2	CHANGEPW*123456*138138	New Password:138138
3	SPEED*123456*080	Set Speed OK: 80
4	RESET*123456	Cancel all alarm setting and re-power on
5	INTERVAL*123456*030	Set Interval 30 s OK
6	IP*123456*121.201.110.106,7000	IP SET OK
7	NUMBER*123456*13612345678	NEW ID: 13612345678
8	APN*123456*CMNET	APN: CMNET
9	USERNAME*123456*username*password	USERNAME:username, PASSWORD: userpass
10	TIMEZONE*123456*+08	TIMEZONE: +08
11	UPGRADE*123456*39.108.130.237,2332	Upgrade Main Starting!!!
12	ACCON*123456*30	Set Acc On Interval 30s OK
13	ACCOFF*123456*60	Set Acc Off Interval 60s OK
14	AT30SUM0	Set Auto track 30s OK
15	ANGLE*123456*60	Set Angle 60 OK
16	TCP	Device Info
17	PULSE*123456*450	Set PULSE parameter 450 OK
18	STARTIDLE*123456	Start Idle Voltage OK: 0.360, 0.720
19	print*123456*010	change the Bluetooth print time is 10 minutes
20	BTprint*123456	Bluetooth printer start to print
21	oiltime*123456*5	change the cut off fuel time to 5 seconds (only for the mechanical throttle car)
22	Cutoil*123456	Cut off the fuel remotely
23	Supplyoil*123456	Supply fuel remotely
24	ADDPHONE*123456*A*13112345678 ADDPHONE*123456*B*13212345678 ADDPHONE*123456*C*13312345678	Add admin phone number
25	DELETEPHONE*123456*A DELETEPHONE*123456*B DELETEPHONE*123456*C	Delete admin phone number
26	ALARMPHONE*123456	Send alarm to admin phone number
27	ALARMCANCEL*123456	Only send alarm to platform not to phone
28	openpulsealarm*123456	Send pulse alarm to admin phone number
29	closepulsealarm*123456	Close the pulse alarm
30	openpulse*123456	Open limp mode
31	closepulse*123456	Close the limp mode
32	Tcp	TP121.201.110.106 P7000DD000019171223244F0000S0014R0000ON30OFF60VJun 12 2020A:CMNET,p450,s80,c15, 0.360V, 0.720V,12.43V,a0,G00,-59 dbm

7.1 Analysis of the content of tcp reply:

(TP121.201.110.106P7000DD000019171223244F0000S0014R0000ON30OFF60VJun 12 2020A:CMNET,p450,s80,c15, 0.360V, 0.720V,12.43V,a0,G00,-59 dbm)

TP121.201.110.106 P7000: IP and port

DD000019171223244: device ID number

F0000S0014: upload data fail 0 times, successful 14 times

R0000: memory data is 0

ON30OFF60: interval of acc on is 30 seconds, and acc off is 60 seconds

VJun 12 2020: firmware of the devices is JUN 12 2020

A:CMNET: the APN is CMNET

p450: Pulse coefficient is 450 (If the pulse coefficient is larger, the speed will be smaller)

s80: speed limiter max =80km/h

c15: For mechanical throttle, the time to disconnect the fuel line is 15 seconds

0.360V, 0.720V: Two throttle voltage values for electronic throttle vehicles

12.43V: vehicle voltage values

a0: a0 is acc off, a1 is acc on

G00: G00 means GPS not fixed, G10 means 10 satellites found

-59 dbm: GSM signal

8. Application Field:

1)   Vehicle Commanding and Dispatching System;

2)   Heavy Construction Vehicles Tracking Device;

3)   Dangerous goods transportation;

4)   Passenger Car Management;

5)   Logistics vehicle management.

6)   Oil Tanker Monitoring and Management

9. Technical Parameter:

Content	Specs.
Dim.	117*92*31 (mm)
Weight	280g
Network	GSM/GPRS/GPS
Band	850/900/1800/1900MHz
GPS chip	U-blox
GSM/GPRS Module	SIM800C
Bluetooth Module	BT360I
CPU	STM32F105RBT6
Power IC	TD1509-ADJ
Anti-jamming	Strengthened Anti-jamming
GPS sensitivity	-159dBm
GPS accuracy	5 m
Time To First Fix	Reacquisition 0.1s Cold status 45s Warm status 35s Hot status 1s
Work Voltage	DC 9V－36V
Battery	Rechargeable 3.7V / 1000mAh Li-ion battery (Customizable)
Standby work current	< 40mA
Storage Temp.	-40°C to +85°C
Operation Temp.	-20°C to +70°C
Humidity	5%--95% non-condensing

10. Parts list:

①   Power wire

②   Speed limit wire

③   Buzzer

④   GPS Antenna, GSM Antenna, SIM Card Slot

⑤   Bluetooth printer (optional)

⑥   Bluetooth antenna

11. maintenance and troubleshooting instructions:

11.1 About GPS speed limiter LED light:

11.1.1 The red light is the power indicator. If it is steady, it indicates that the main power is on, and the off indicates that the main power is off, if the red light is not on, please check the power connection is normal or not

11.1.2 Blue is the GPS indicator, always on indicates GPS positioning, and off means that GPS is not positioned，if GPS can't fix the position, please check the GPS antenna is connected normal or not.

11.1.3 Green is the system indicator. If it is steady, it indicates that the GSM network is not registered. please check the SIM card is normal or not, and GSM antenna is normal or not?

11.2 About platform:

11.2.1 if GPS speed limiter not online, you need check the parameters of the devices, check the IP and port, check the ID number, and also need to check the apn is correct or not, APN information see: 7.1

11.2.2 for app, if you can't download from app store, you can download from the QR directly

11.3 About the limit speed:

if GPS speed limit can't control the speed, you need to check all the steps are correct: 3.1, 3.2, and 3.3

11.31 If the speed limit has too much delay, you must connect the speed pulse line. If the vehicle is a mechanic throttle, you must connect the solenoid valve and the speed pulse line, so as to achieve the effect of no speed limit delay.

11.4 About the Bluetooth printer

if blue light is off, means Bluetooth is not connected, check the printer battery and others, or power off the printer and then power on it again.

Part 2: About platform

1. Load the GPS platform: www.gps-go.com

User:xxxx   password:123456

Note: xxxx is the platform account, need to contact with salesman to get this account name and password

For APP, search gps-go in google store or download from this QR:
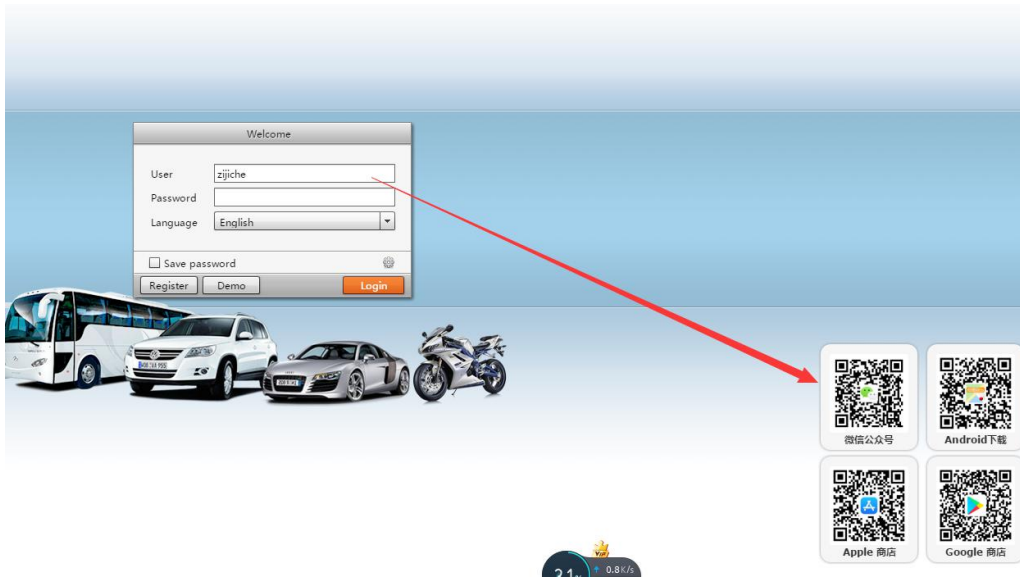
Android   Apple

WECHAT Google Store

2 create the account or user:

3: ADD GPS device to the platform

Note: ID number is 11 digital

3. The platform functions and report
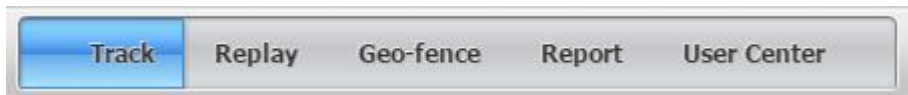
4.1 Track : you can see the real-time location of the vehicle

4.2 Replay : you can check the vehicle history of running

4.3 GEO-Fence : If a vehicle enters or leaves this Geo-fence, an alert message will be received on the platform

4.4 Report: you can check all the report of the GPS devices.
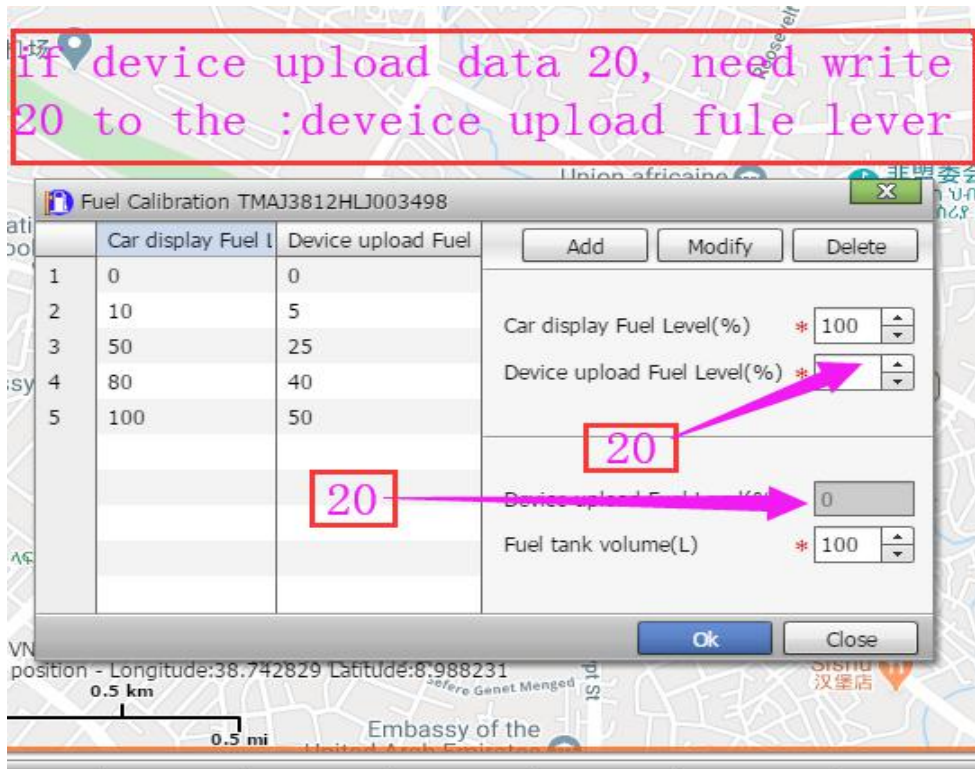
4.5 Overspeed alarm report

4. Fuel sensor function and temperature sensor function

4.1 fuel sensor function:

4.1.1 How to calibrate the fuel sensor value?

if device upload data 20, need write 20 to the :deveice upload fule lever

Fuel Calibration TMAJ3812HLJ003498

	Car display Fuel L	Device upload Fuel
1	0	0
2	10	5
3	50	25
4	80	40
5	100	50

Add   Modify   Delete

Car display Fuel Level(%) * 100

Device upload Fuel Level(%) *

20

20

Device upload Fuel... 0

Fuel tank volume(L) * 100

Ok   Close

position - Longitude:38.742829 Latitude:8.988231

0.5 km
0.5 mi

5.1.2 When calibrating the oil quantity value, pay attention to a problem:

the number that cannot be changed in the gray part is 10 times the actual oil quantity voltage value uploaded by the device. When calibrating, also fill in the oil quantity corresponding to this value.

If you use a 0-5V oil quantity sensor, you can calibrate two values:

0 corresponds to 0% "car display fuel level"

50 corresponds to 100% "car display fuel level"

For AD fuel sensor, there are 2 types for choose:

1. Capacitive fuel sensor CLS2
2. Drop-in pressure oil quantity sensor PFS-BP86Z0
3. Ultrasonic wave fuel sensor

PFS   CLS   ultrasonic wave

5.1.3 If you connect the oil pump voltage line of the original car, you need to calibrate at least 5 sets of data to be accurate. For example: the voltage value of the oil pump of the original car is 0.5V, and the corresponding oil level is 20%.

Need to fill in a value of 10 times the calibration value: Device upload fuel lever: 5, corresponding to car display fuel level: 20

5.1.4 fuel sensor report:

5.2 temperature sensor function
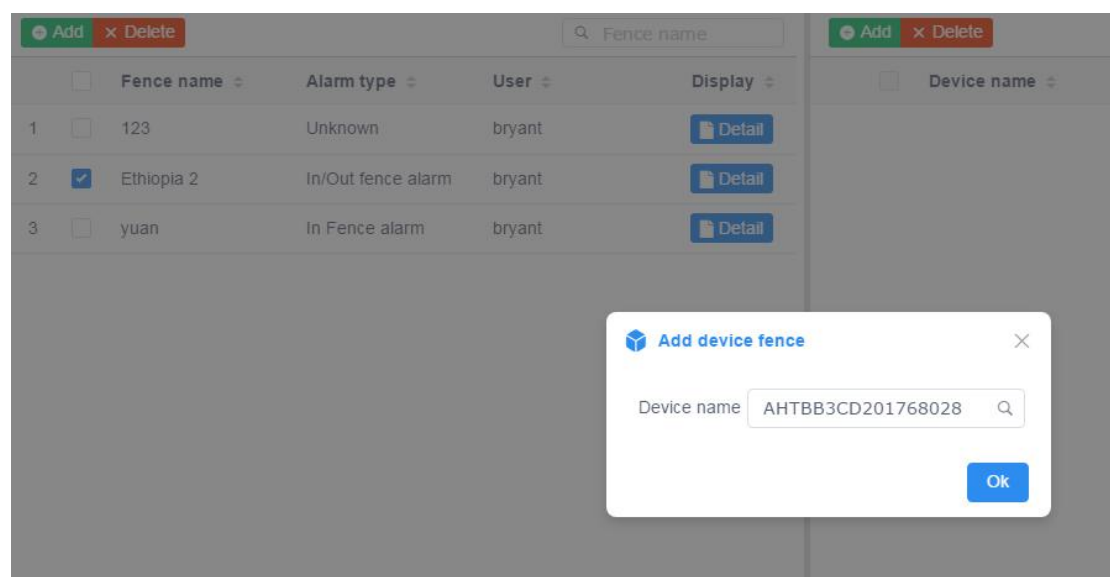
5.3 Regional speed limit or road speed limit or GEO fence speed limit

5.3.1create a GEO fence , and set the IN Fence alarm and out fence alarm.
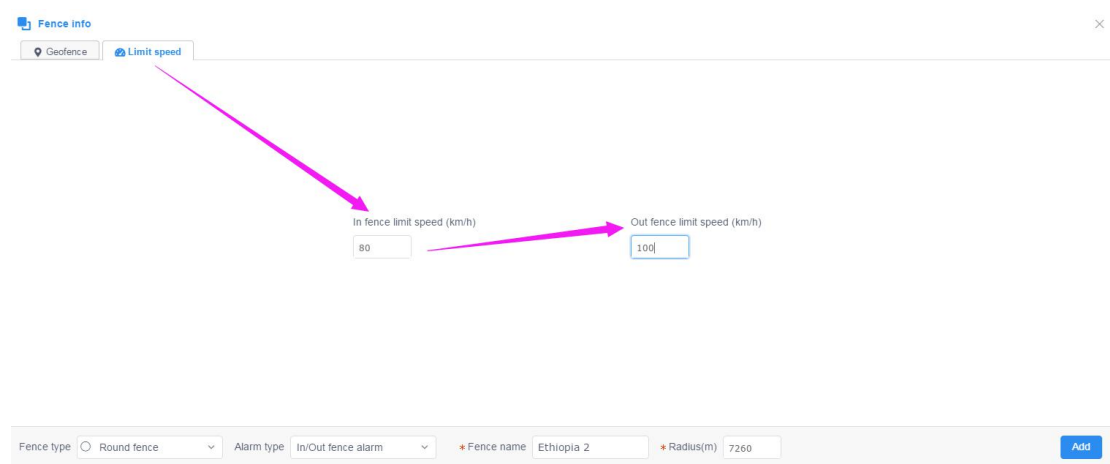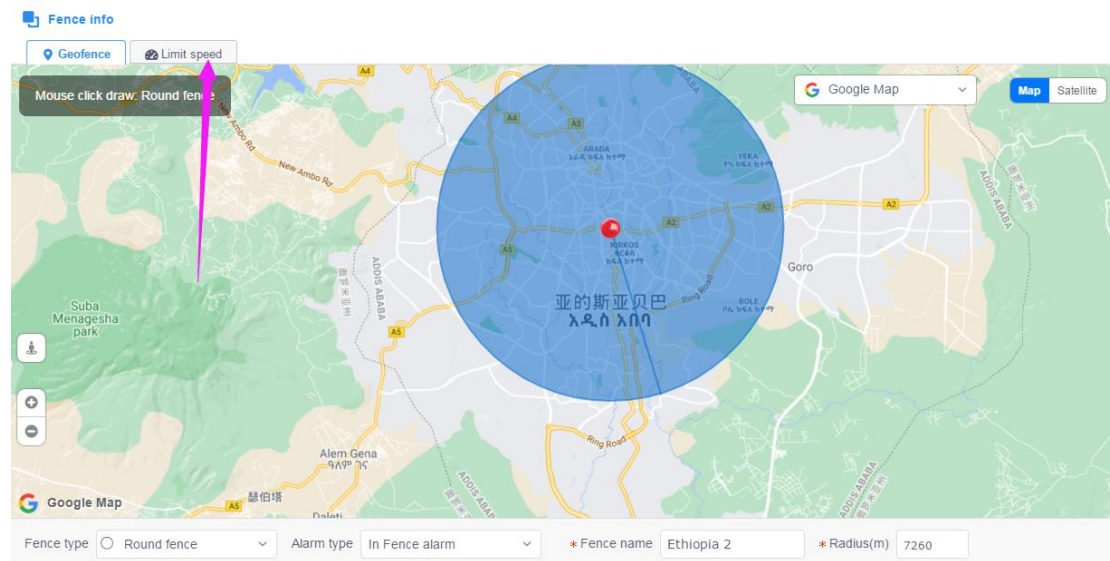
5.3.2 add the device to use this GEO fence

11. After-sale service:

Warranty statement:

1. The specification is subject to modification without notice.

2. If the appearance and color of the product is changed, please take the actual product as the standard.

3. This warranty card is only applicable to the following listed IMEI/ID machine.

4. Please keep this warranty card, and please present this card and the original purchase receipts when repair service.

5. This is the basic certificate of warranty, please fill in this card carefully and keep it well.

User Name		Contact Person	
Product Model		IMEI/ID No.:	
Purchasing Date		Invoice No.:	

Shenzhen YiTuoWuLian System Co., Ltd

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