iStartek GPS Vehicle Tracker
VT600 User Manual
V1.3

Contents

1. Copyright & Disclaimer

iStartek shall not be liable for direct, indirect or all losses (including but not limited to economic losses, personal injuries, property and assets) caused by the use or inappropriate use of the product or documents.

2. Product Overview

VT600 is a GSM based GPS vehicle tracker, specially developed and designed for fleet management, public transport management, school bus management, taxi operation management, vehicle insurance company management, rental management and private car anti-theft, etc.

VT600 has an inbuilt GPS module to obtain accurate position data. This device utilizes its GSM capability to send position data or vehicle status to tracking server base for tracking and fleet management.

VT600 has built-in 4MB Flash memory. When the device enter a GSM blind area, it will automatically save the historical location data and resend once GSM signal recovery.

3. Product Functions

1. GPS+LBS Dual Positioning
2. Real-time Tracking
3. Track by Interval
4. Track by Distance
5. Track by Turning
6. Track by SMS
7. SOS Alarm
8. Power-cut Alarm
9. Engine and Door ON/OFF Status Alarm
10. Geo-fencing Alarm
11. Speeding Alarm

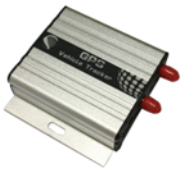
12. GPS Blind Area Alarm
13. Harsh Acceleration Alarm
14. Harsh deceleration Alarm
15. Low Battery Alarm
16. Low External Battery Alarm
17. Mileage Report
18. 4MB Flash Memory
19. OTA
20. ACC ON/Off Time Interval
21. Remote Control of Oil and Electricity
22. Listen-in
23. iButton for Driver Identity Recognition(Optional)
24. Buzzer Alarm(Optional)
25. Fuel Monitoring(Optional)
26. Temperature Monitoring(Optional)

4. Product Specifications

Items	Specification
Size	65x61x26mm
Weight	104g
Power Supply	9-36V/1.5A
Built-in Battery	500mAh/3.7V
Normal Power Consumption	60mAh
Working Time	30 hours in power-saving mode and 7.5 hours in normal mode
Operating Temperature	-20°C to 55°C
Humidity	5% to 95%
Frequency	GSM/GPRS: 850/900/1800/1900Mhz
GPS Sensitivity	-165Db
Position Accuracy	2.5m
LED	2 LED lights to show GPS/GSM status
Antenna	External GPS/GSM Antenna
Flash Memory	4MB(16192 GPRS, 256 SMS)
Sensor	Vibration Sensor
I/O	3 digital inputs (1 negative trigger, 1 positive trigger, 1 positive or negative optional trigger) 1 analog input (0-6V) 1 output 1 Mic port 1 USB port

5. Product and Accessories

5.1 Standard Accessories



Unit

Power cord

GPS Antenna

GSM Antenna

5.2 Optional Accessories

USB Cable

Relay

iButton Reader

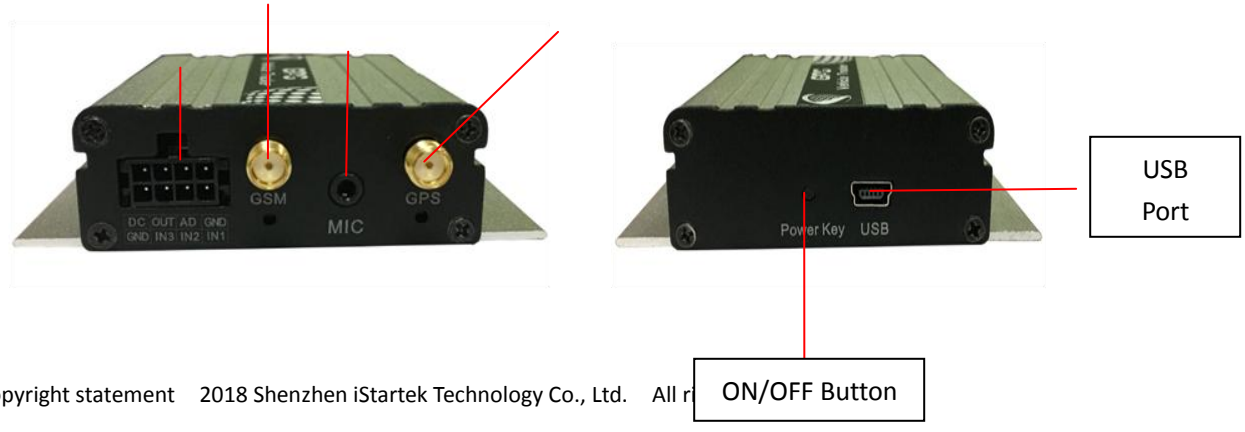
iButton Key

Ultrasonic Fuel Sensor

Lever Type Fuel sensor

Temp Sensor

6. Product Appearance



7. Product Use

7.1 Charge

When using VT600 for the first time, please connect the device red wire(positive) and black wire(ground) to 12V or 24V power supply for at least 2 hours to ensure sufficient power, install it on vehicle after setting and testing.

7.2 Install SIM Card

① The device supports 4G/3G Sim Card with 2G service.
② Make sure that the SIM card has sufficient balance, and has opened GPRS function and obtained the correct APN of the SIM card.
③ Make sure that the PIN code is turned off.
④ If you require the function of reporting SMS location after makes a phone call, please ensure that the SIM card has caller display function.
⑤ Make sure the device is OFF before installing SIM card.
A. Unscrew the front baffle screw and remove the PCBA

B. Install SIM Card

C. Install PCBA and screw up the screw

7.3 Installation of GSM/GPS Antenna

① Twist the GSM antenna to "GSM" SMA Connector and GPS antenna to "GPS" SMA connector, make sure both antennas are tightened and not loosened.
② GSM antenna can be hidden in any place far away from the power supply, can not be pasted on the metal surface otherwise it will affect the strength of GSM signal.
③ GPS antenna have to be installed in open sky place without metal shielding.

7.4 Device Boot

Hold the ON/OFF button for 3-5 seconds or connect an external power supply, VT600 will turn ON.

LED indicator lights operation status:

GPS LED (Blue)	
On	Input is active
OFF	Device is off or in sleep mode
Flashing (every 0.1 second)	The unit or GPS module is being initialized
Flashing (0.1 second on and 2.9 seconds off)	VT600 has a GPS fix
Flashing (1 second on and 2 seconds off)	VT600 has no GPS fix
GSM LED (Green)	
On	A call is coming in or in a call
OFF	Device is off or in sleep mode
Flashing (every 0.1 second)	The unit or GSM module is being initialized
Flashing (0.1 second on and 2.9 seconds off)	VT600 is connected to the GSM network
Flashing (1 second on and 2 seconds off)	VT600 is not connected to the GSM network

7.5 Track by calling

Make a missed call to the tracker and it will report its location by SMS with the following google link format, click on the link to display the current location of the device on Google Maps.

SMS Content Description:

142161102222,Current! 20171123 15:53,A,0Km/h,http://maps.google.com/?q=22.540103,114.082329

Content	description
142161102222	Device ID

Current!	Alarm characters, different alarm events have different alarm characters
20171123 15:53	Date and time, format YYYYMMDD hh: mm
A	GPS positioning status, "A" means GPS valid, "V" means GPS invalid.
0Km/h	The device velocity is 0 km/h
http://maps.google.com/?q=22.540103,114.082	Google maps link

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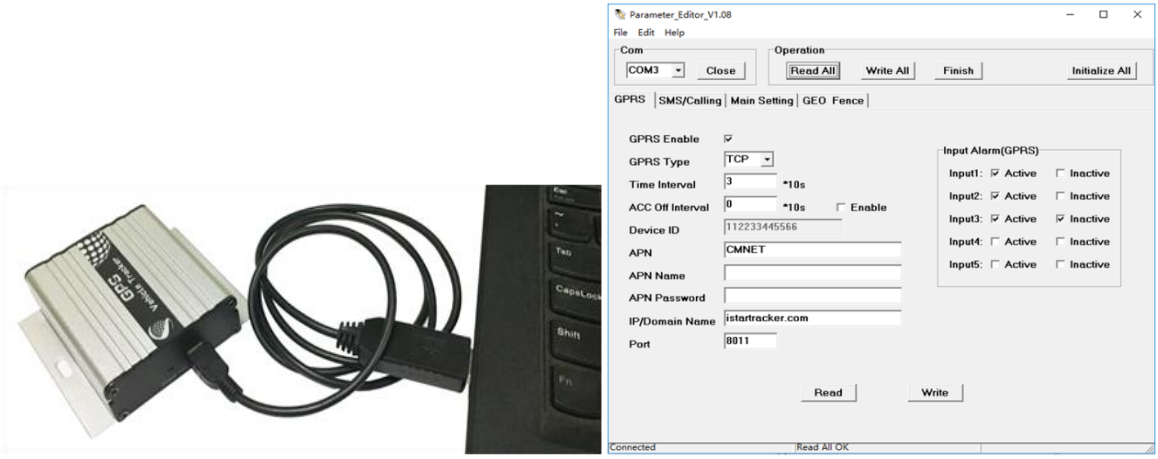
7.6 Track by SMS

Send SMS W000000,100 to VT600
You will receive a SMS with Google map link, and click on the link to display the current location of the device on Google maps.
Refer to **iStartek SMS Protocol** for SMS instructions and more SMS commands.

7.7 Parameter Configurations

Download and install USB cable drive **PL2303_Prolific_Driver**.
Connect VT600 to PC via USB cable, run **Parameter_Editor** configuration software and open the port. Press the ON/OFF button for 1sec to let device enter parameter configuration mode.



Refer to the **Guidelines for the Use of Parameter Configuration Software** for more parameter configurations details.

7.8 Tracking by Platform

You can set APN, server IP, Port and TCP/UDP, GPRS interval by SMS commands 011, 012, 013, 014, or you can use Parameter_Editor software to configure corresponding parameters.
Refer to **iStartek SMS Protocol** and **Guidelines for the Use of Parameter Configuration Software** for more SMS command functions and parameter configurations.

8.Product installation

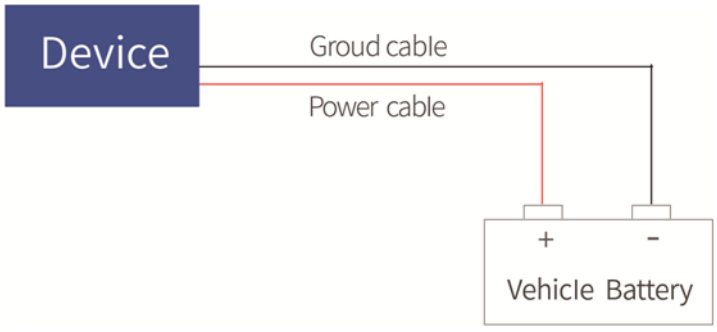
8.1 Introduction of Input/Output Function

DC	OUT	AD	GND
GND	IN3	IN2	IN1

PIN	color	functions
DC	Red	DC In (power input). Input voltage: 9V~36V. 12V/24V suggested.
GND	Black	Ground , connect to the negative pole of car battery or to the place where with iron.
IN1	White	Digital input 1, negative trigger; Connect SOS button by default.
IN2	White	Digital input 2, positive or negative trigger optional, negative trigger by default ; Can be connected to door trigger line and detect the OPEN/CLOSE status.
IN3	White	Digital input 3, positive trigger; Can be connected to car ACC and detect ignition ON/OFF status.
OUT	Yellow	Output control. Low voltage (0V) when effective and open drain when ineffective. Output open drain sink voltage (ineffective): 45V max. Output low voltage sink current (effective): 500mA max.
AD	Blue	10-digit Analog Input. Input voltage: 0~6V
GND	Black	SOS button ground wire

8.2 Power/Ground Cable Installation

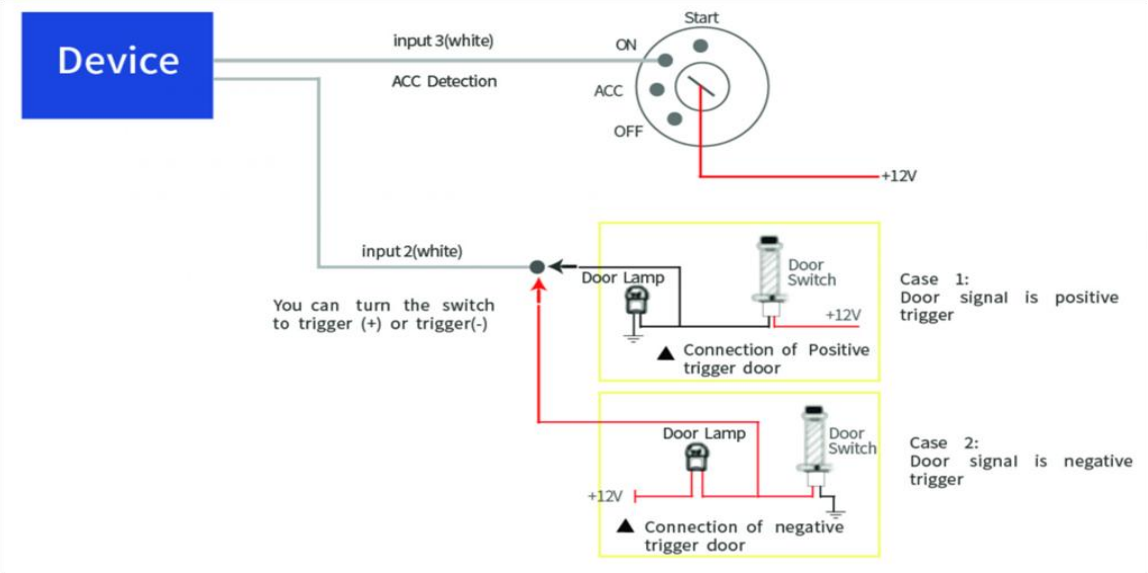
Respectively connect the red power cable and the black ground cable to the positive and negative poles of the car battery to give power supply:



8.3 Digital Input Cable Installation

Input3 can be connected to the “ON” switch to detect the ignition.

Input2 can be connected to the car door to detect OPEN/CLOSE status.



Input1 or Input2 (Vil trigger) can also be connected to PIN switch to detect the hood status:

8.4 Analog Input Installation

The analog input range is 0-6V, it can be connected to voltage output sensors, such as fuel sensor.

Input Voltage Formula: Input Voltage=(AD*6)/1024

For example, GPRS data is:

094506.000,A,2232.5412,N,11404.6919,E,0.00,,290709,,*12|1.7|110|0000|00AA,0000

AD = 0x00AA = 170

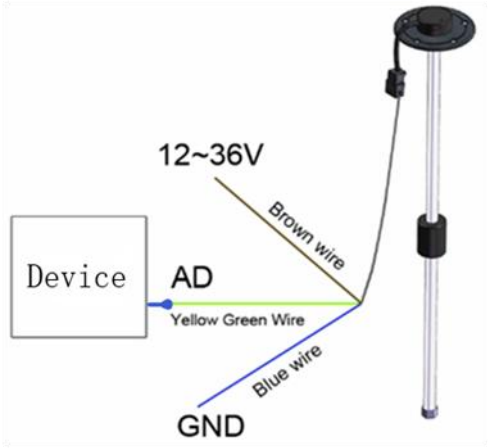
Input Voltage=(AD*6)/1024=(170*6)/1024=0.996V.

Take fuel sensor connection as an example, sensor yellow-green cable is connected to VT600 blue cable.

The output voltage of the sensor is 0V when the oil is empty and 5V when the oil is full.

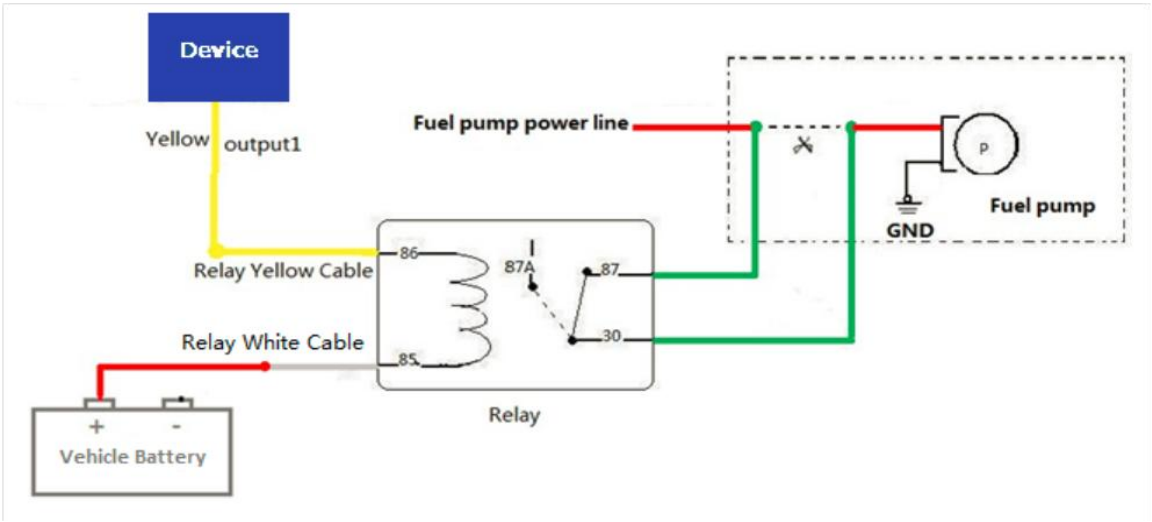
Calculating the fuel percentage:

Percentage= (ADx6) ÷ (1024x5) x100%



8.5 Output Control Cable Installation

The output control cable can be connected to relay for cutting off oil/electricity and controlling the vehicle. Can also connected to buzzer.



8.6 Temperature Sensor Installation (Customized)

Customized hardware and software versions when the device connect to temperature sensor.
Customizing AD cable to 1-wire cable, IN2 to 5V power supply cable of temperature sensor.

The wiring diagram is as follows：

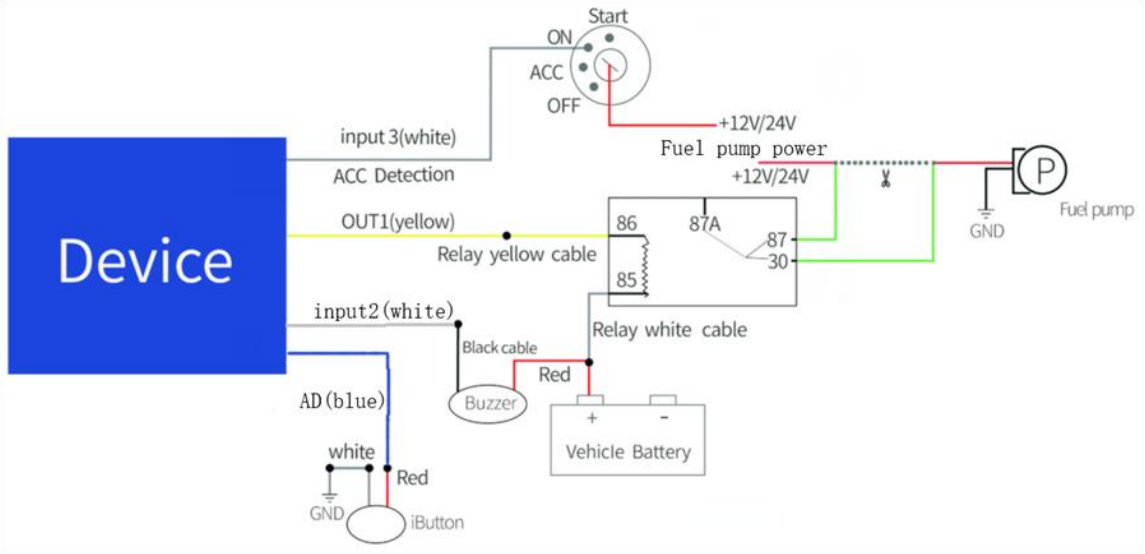
8.7 iButton Installation (Customized)

Customized hardware and software version when device connect to iButton.

Customizing AD cable to iButton 1-wire cable, Input2 to Output2 for swiping beep.

Device connect with ibutton can prevent driver start vehicle illegally.
When the driver starts the vehicle without swiping authorized iButton Key, it is considered illegally, the device will be cut oil and electricity automatically, the vehicle will not start.
Refer to the related parameter setting instructions **iStartek SMS Protocol** and **iStartek GPRS Protocol**.

The wiring diagram is as follows:



8.8 Ultrasonic Fuel Sensor Installation

The height measurement range of the ultrasonic fuel sensor is 0-100cm, and the corresponding voltage output range is 0-5V.
The oil calculating formula: h=(((AD*6)/1024)/5)*100cm

If you have any questions, please send E-mail to us info@istartek.com, we will serve you wholeheartedly !