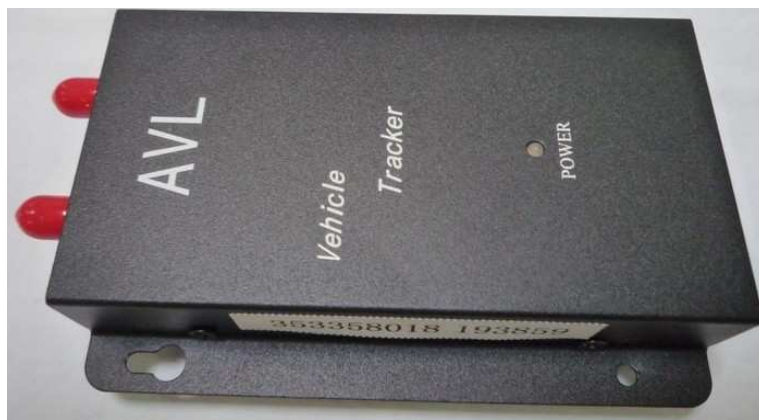


User Manual of Automatic Vehicle Location System

(Model No.: AVL-011)



I. Main functions

#	FUNCTIONS	DESCRIPTION	
1	GPS/GSM	track by GPS (global positioning system) and GSM station code.	
2	NO distance limited	Remote tracking by GPRS network, SMS control and receive alarm SMS.	
3	Tracking methods	by SMS	by sending message to the device
		by Website	Please login in our SMS tracking website, fill the latitude and longitude you got, you can find the position of the car on the website.
		by Wireless Website	GPS WIRELESS WEBSITE TRACKING, from this, you can get the right position of your car as well as history for 1 month.
4	Arm and disarm by the first owner call.	The first owner can call the device: 1. Ring some times and hang-up, the device will call you back, the device will hang-up by itself. It means the device at ARM status. 2. Ring some times and hang-up, will not call you back, it means the device at DISARM status. Remarks: owner does not need to pay changes	
5	MIC monitor	Send command "11111MON" to the device, the device will call the number you set, pick up the phone, you can monitor what the driver says in the car.	
6	Stop the car	The GPS software or the car owner can stop the car or disarm/arm the car.	
7	SOS	Press the SOS button for 3 seconds, the device will send SMS to the owner's cell phone or monitoring center.	
8	Compatible with car alarm	If the alarm lasts for more than 10seconds, it will send the police information to owner or center.	
9	Start the engine illegally	At ARM status, the device will send SMS "start the engine illegal ", the device will cut-off engine; if you want to cancel this alarm , send DISARM command .	
10	Over speed alarm	You can set the MAX speed by SMS, when the car runs over speed, the device will send SMS to the owner of the car and monitoring center.	
11	Geo-fence alarm	When UNIT is out of these predefined area, a report will be generated	
12	Movement alarm	At arm status, if the car moves, the device will send SMS to the owner of the car and monitoring center.	
13	Shake alarm	At arm status, with built- in shake sensor, it will trigger an alarm if illegal shakes on the car. The device should be put horizontally, or it will make a mistake alarm all the time to your cell phone	
14	Power-cut alarm	When battery powers off or cut-off, the device will send SMS to the owner of the car and monitoring center.	
15	The double commands compatible	We adopt double commands compatible for the international use	

Function light spot: GPS/GSM Double location mode

When you check the position by your own cell phone, you will get Longitude, latitude, station code.

The definition of A V H: (it's the symbol of status of GPS signal)

- **A:** Valid, GPS signal is available
- **V:** GPS signal is interfered. However, the basic accuracy of the location within 100 meters
- **H:** GPS signal is unavailable. It may be caused by 1. GPS antenna is broken; 2. Something wrong with GPS module, please get the position according to the code station; 3. GPS antenna is not connected correctly.

II. The preparation before the installation

1) Please check product according to the packing list: main unit, GPS antenna, GSM antenna, 4P wires, CD.

Options: Relay, SOS button

2) Please read this user manual carefully to understand the device. Before enter the oil station, device should be turned off.

3) Please know the car well before installation , such as the voltage of power, if there is any metalster or not.

Remarks: voltage should be 12V~36V, GPS signal will be weak or unavailable under the metalster.

III. DATA SPEC

GPS definition	5~15meters
DATA communications mode	GSM/GPRS
Operation Temperature	-20 ~ +70 degree Celsius
Operation humidity	20% ~ 90%
Battery voltage	DC 12V
DATA interval time	9-99 S
Power consumption	<=60mA
The contents of data you get	Time, car status, latitude and longitude, speed, course, GSM station code.
The working time of Backup battery	12Hours

IV. The ports and wiring diagram



Start from the left to right side.

Port 1	Power positive DC12V
Port 2	Power cathode
Port 3	Door sensor alarm
Port 4	stop the car (relay)
Port 5	ACC
Port 6	Connect the car alarm

V. Installation

Step 1: Install SIM Card

(1) Unscrew and remove the front cover of device

(2) Insert SIM card by sliding it into the card holder slot, with the chip module facing to the connectors on PCB, as direction shown in the picture.



(3) Put back the front cover and screw it up.

- Be sure to turn off the device before installing the SIM card.
- Be sure to deactivate the PIN code, so that the SIM card can operate without PIN protection.
- Before installing SIM card, please use a mobile phone to confirm that SIM card can make & receive phone calls (Can display the caller ID) without problem.
- Before installing SIM card, please use a mobile phone to empty the SMS storage of SIM card

Step 2: Install GSM antenna

- Connect the GSM Antenna to the unit.



- Fasten the connection, do not swing round the antenna itself.

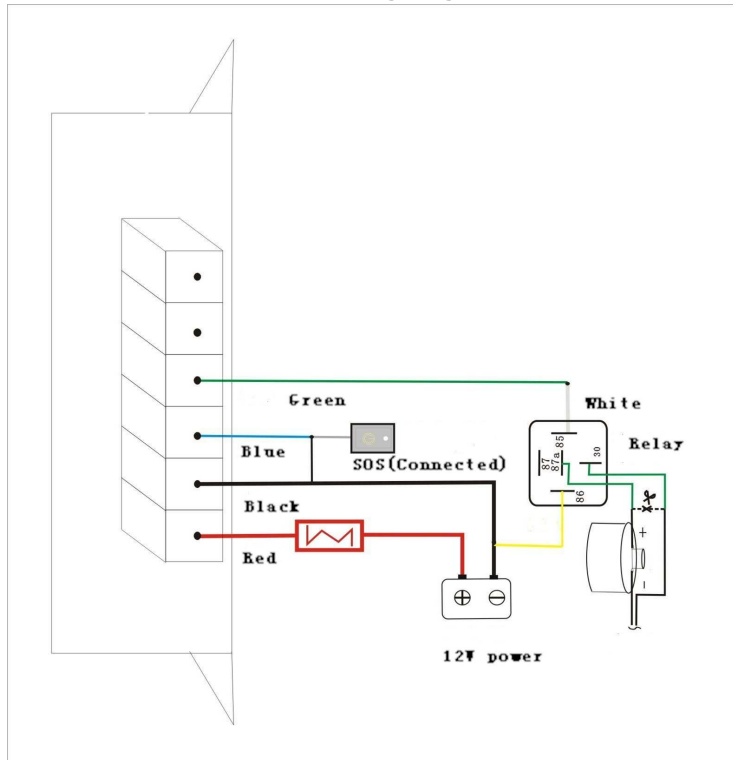
Step 3: Connect GPS antenna



- GPS antenna is used to receive satellite signals in the sky. It should be positioned where it has unobstructed view of the sky. The ideal location is on the top of dashboard or close to the rear window of car.
- GPS antenna can pick up signals through glass and plastic, but will not “see the sky” through metal or other conductive surfaces. To avoid distractions of GPS signal, make sure the antenna is not covered or shielded by any object containing metal, such as the metallic windshield.
- If your car with metallic windshield, please cut a hole on the windshield above the place where you put GPS antenna, so that the antenna can receive the GPS signals.

Step 4: Connect power charging

AVL-011 connects to the car charger lighter socket.

**VI. Wiring description**

- Connect the wiring correctly.
- The AVL unit should be connected to power source, the wiring work has been completed and checked at last.
- GPS antenna is used to receive satellite signals in the sky. It should be fixed to face the sky; and should not be covered or shielded by any object containing metal, such as the metallic windshield.
- Wiring connections must be firm and reliable; and the joints should be wrapped with insulating tape tightly.
- The unused electrical wire should be properly insulated.

VII. Descriptions of LED indicators (red LED)

Flash: Work normally

Constant glow: charging

Constant dark: In trouble or no power

VIII. Inspection item after installation

After connecting to the power source, the RED LED Indicator should be “constant glow” or “Flash”

SMS commands

Commands	Explanation	Reply	Remarks
111111*10T1*20T2*	To set the car owner T1: the 1 st phone # T2: the 2 nd phone # cell phone number or telephone number.	111111*10phone number *20phone number	The 1 st phone # belongs to the 1 st owner. Checking position, receiving Alarm, and arm/disarm when calling the device. The 2 nd phone # belongs to the 2 nd owner; it can receive alarm from device.
111111PSW *****	Setting the new password.	111111PSW *****	Default password is: 111111, we strongly recommend you to change the password when you start to use the device. Please remember your new password.
111111ARM	ARM	ARM successfully with latitude & longitude	
111111STP	Stop the car by owner	Car stopped, with latitude & longitude	
111111DSM	Disarm	DISARM successfully with latitude & longitude	
111111CHK	Ask for the position	the current status with latitude & longitude	
111111RES	Relieve after stopping the car	Cancel successfully	The owner can cancel the alarm and relieve after stopping the car (it can not relieve SOS alarm. If the car was stopped by center software, the command will not be available.)
111111MONT#	Monitoring the driver T#: phone number		System will call the caller back e.g. if password is 111111, the command 111111MON13800138000 will cause the system to call you back on 13800138000 and activate the secret microphone so that you can listen to conversation of people inside the vehicle
111111MOV:3:X,	Open the Speed Alarm	111111MOV:3:X	X=1,open X=0,close
111111OVF:X	Set overspeed alarm	111111OVF:X	Default speed is 200Km/h, X is >=30
111111MOV:6:X	Open the moving alarm	111111MOV:1:1,2:0, 3:0,4:0,5:0,6:X,7:0,8 :0,	X=1,open X=0,close
111111RAD:XR:a,YR:b	Set the moving radius	111111RAD:X,XR:a, YR:b,	X=1, open moving radius X=0, close. “a” is latitude radius, “b” is longitude radius. The unit is meter. For example:111111RAD:1,XR:50,YR:60, X=1,mean the status is open, and the scope is 100*120.

Remarks: if you need more SMS commands, please see the appendix

Please protect the device after you installed.

- Use the insulate rubberized fabric to protect the wires, and fixed
- Put the device in the shelter and fix the device.
- Cut the rest of the wires if no use

IX. Locate the car through internet

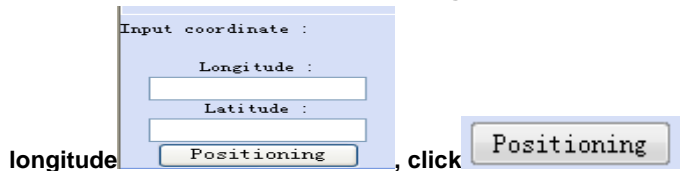
1. If your SIM CARD does not have activate GPRS, track through website: <http://gsm110.vicp.net/e/>

The username: **bbbb**, password: **aaa**

2. Login into <http://gsm110.vicp.net/e/> Fill in the username: **bbbb** and password: **aaa**

B: Input latitude and longitude, steps of checking as following:

Send **11111CHK** to SIM Card, a message will be returned at once, then input latitude and



X. Application of Moving and Geo-fence

1. Moving alarm: after arm, the equipment automatically confirmed the real-time latitude and longitude when the latitude and longitude change on certain speed, illegal moving information will be reported timely to center and owner; operate the instruction of moving alarm based on instruction set.

2. Geo-fence alarm: known latitude and longitude as center coordinates, to set the radius distance across the distance, when vehicle crosses over the setting distance, timely report to center platform and owner, format as following:

11111RAL:XR:x,YR:x,X:str,Y:str,

default value:11111RAL:XR:0,YR:0,X:0,Y:0,

XR: Latitude radius,10m/unit

YR: Longitude radius, 10m/unit

X: current latitude

Y: current longitude

XI. Maintenance and repair

1. Suggest and agreed

- a) GPS vehicle terminal of the installation and maintenance of vehicle repair operate by local professional maintenance personnel. Without the permission, the user is not allowed to dismantle or repair. Otherwise, all losses shall be borne by the user.
- b) Please keep the terminal dry, if water splashed into the equipment, please contact with the local professional maintenance personnel, before this, don't start vehicles. Otherwise, all losses shall be borne by the user.
- c) When the vehicle is in building, cave, tunnel, or close to a huge building, GPS satellite signal and GSM communication network signal will be influenced that cause equipment work disorder
- d) Backup battery: the backup battery only works at temporary power off, so please keep the car battery power.
- e) If other problems, please contact with the local dealers immediately.

2. Maintenance Methods

Symptom	Possible reasons and solutions
No feedback to mobile phone	<ol style="list-style-type: none"> 1. There is no enough money of SIM card, please charge money. 2. Phone number maybe changed without informing center manager, please contact with center and reset phone number of car owner (only for service with center manager) 3. SMS inbox is full with messages; please delete some messages in time.
Instability of network login	<ol style="list-style-type: none"> 1. Check the local network signal and prepaid cost of SIM card; 2. Check whether the intact, and GSM antenna terminal connector is tighten 3. Check the GSM antenna which can not be closed or working in shielding area
GPS without working for long time	<ol style="list-style-type: none"> 1. Initialization of a new GPS receiver need a long time, 2 minutes for searching position is a normal phenomenon; 2. GPS antennas can not be shielded above, if install equipment inside garage, please move the vehicle out of the garage when testing the equipment and the vehicle should far from huge building and valley 3. Check whether the GPS antennas and terminal connections
Listening is not clear	<ol style="list-style-type: none"> 1. Check whether the listening MIC wire drops off or a short circuit. 2. Listening MIC should be installed far away from engine, hot fan motor, GSM, GPS antennas, audio source system, etc.
False alarm	<ol style="list-style-type: none"> 1. If press the SOS button as a false alarm, please relieve this alarm with disarm instruction. 2. When the vehicle alarmed because such as thunder, only the center can eliminate.

Appendix 1: limited warranty terms

In compliance with the terms and conditions, if there is insufficient material or workmanship of the terminal and accessories (hereinafter referred to as the "product"), our company will be free warranty:

- 1) This limited warranty terms applicable to the buyers who buy GPS vehicle terminal from our company or the authorized dealer (hereinafter referred to as "consumers").
- 2) From the date of purchase, consumers exchange within three months and have warranty service for one year. In free warranty period, due to the product's material and process of the equipment damage caused by inadequate, our company or the authorized service center is responsible for free warranty.
- 3) During free warranty, human factors caused by damage to the equipment, our company or the authorized service center, responsible for maintenance with maintenance cost. The following conditions are not in free warranty: (1) damage by consumer improper operation, (2) antenna broken due to external and fracture, (3) on the situation of vehicle maintenance, power supply voltage exceed GPS devices and equipment damage rated voltage.
- 4) If warranty expires, our company and the authorized service center are responsible for life-long guarantee with maintenance cost.
- 5) During the warranty period (including free warranty period), the equipment damaged because of opening equipment by consumer, our company will no longer provide free warranty.

Appendix 2: SMS commands

Commands	Format	Remarks
Request one position	W*****,000	***** is password
Change password	W*****,001,&&&&&&	***** is old password, and the default password is 666666. &&&&&& is new password
Set time internal of position	W*****,002,X	X(1digital) time internal (unit: minute)
Set over speed alarm	W*****,005,X	X (the speed preset value) (unit: 10Km)
Set device number for GPRS	W*****,010,Tel	Device number according to GPRS module (tel must be < 14 digits)
Set APN	W*****,011,APN, APN User Name, APN Password	The default APN is CMNET. If your SIMCARD have no APN NAME and APN password, just set the APN. The MAX character: 99
Set IP Address &port number	W*****,012,IP,PORT	IP:XXX.XXX.XXX.XXX PORT: [1,65536] (port)
Open or close the GPRS	W*****,013,X	X=0, close GPRS X=1. open GPRS
Set the GPRS upload time	W*****,014,X	X the interval time, the unit 10seconds.

Attachment

AVL-001

