AUTOMATIC VEHICLE LOCATION
AVT-2000
Installation Manual

V. 2.07

Product name : GPS Vehicle locator (GPS+ GPRS)

Approved by: 2007/9/11

1、Installation

Note:All that stated here are only for the basic type of AVT-2000 products. Since the AVT-2000 series of products are precise high-tech electronic devices, professional unit and personells for the installation and test of the monitoring service platform will be suggested here.

Fig. 1.

Pin Define

12 Pink	10 Blue	8 Orange	6 White	4 Green	2 Red
11 Pink	9 Blue	7 Orange	5 White	3 Green	1 Black

Package List

Item	Part Name	Q'ty / UNIT
1	AVT-2000 Main Device	1PCS
2	Fixed Screws Shaft	2PCS
3	Power Cable 2 pin (Red/Black)	PCS
4	Application Cable 6 pin (six colors)	1PCS
5	GPS ANT	1PCS
6	GSM Antenna With External antenna	1PCS
7	Cable Tie	5PCS
8	Relay	2PCS

1-2、Installation

※ **Caution: Please turn off the power before process of installation**

※ **Please install the devices in strict accordance with the step sequences stated below.**

1-3-1、Fitting SIM

One GSM SIM card will be needed for each set of AVT-2000 products, the selection of the ideal type of SIM card please follow the recommendation from your service provider.

※ **Please verify beforehand that the SIM card provides GPRS service and release the start pin.**

1-3-2、Testing SIM

An ordinary GSM mobile phone will be the only thing necessary for the GSM SIM test.

- Please cancel and remove the Pin of password.
- Make test call
- Test the picking and receiving of the phone calls
- Check the accuracy of the SMS Service center number
- Test the sending of messages
- Test the receiving of messages

1-3-3、Insertion the SIM

A. Align the SIM card with the slot and gently insert it into the slot as illustrated in Fig. 2.

Fig 2

B. End of fitting SIM card and close the SIM slot

1-3-4、Installing the GPS Antenna

1. The installation of the GPS antenna, please make sure to leave the receiving side of the antenna upside (namely towards the sky) and there should be no metal obstacle or shield above the antenna.

2、The suggested position to install the GPS antenna is:

- somewhere safe under the front screen
- somewhere safe under the front dashboard(of non-metal cover)
- under the plaque of the rear wind screen of the car
- inside the front bumper (of non-metal cover)
- under the windscreen wiper plaque (of non-metal material)

Attention:

1、 **if the windscreen happens to be covered with heat insulation membrane or heat up membrane, this would weaken the receiving of the GPS signal, and cause the failure of normal working of the GPS, and unable to locate the car, please change the position of the GPS antenna.**

2、 **The GPS antenna could also be absorbed on metal object, or glued tightly by the wide sponge double sided tapes. Please don't remove the cover of the GPS antenna.**

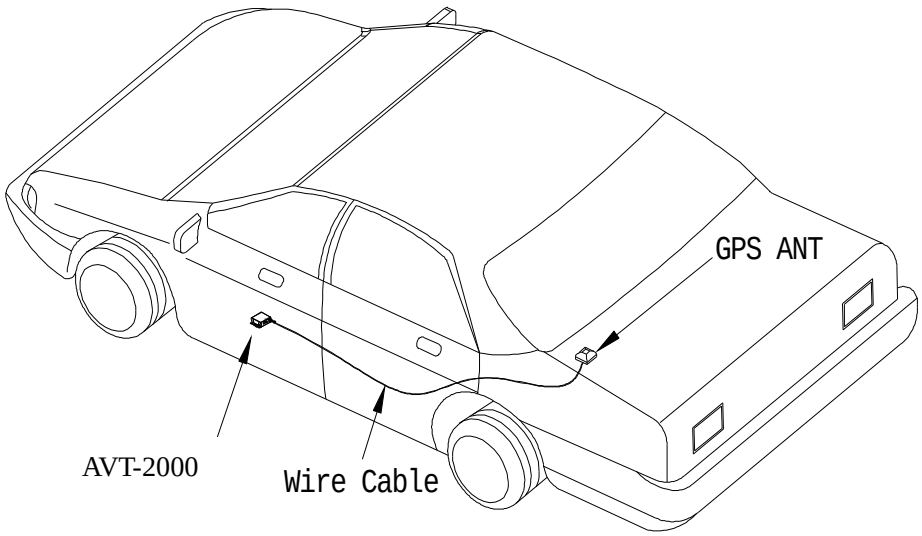


Fig.3

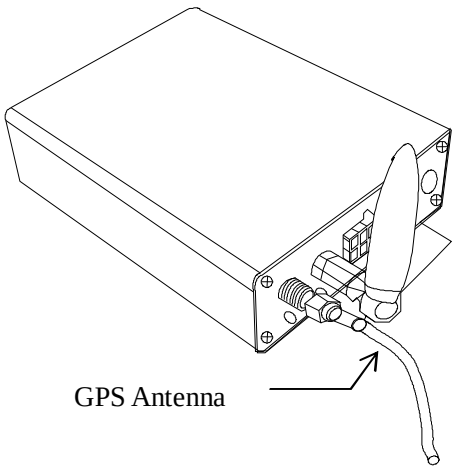


Fig. 4

※ It is recommended to install the GPS antenna on the exterior of car to gain the maximum signal efficiency.

1-3-5、Linking the SOS Button

As shown in Fig. 9, there is a hole on the dashboard reserved for mounting the SOS button，A connection cable is provided with 4 pin connector to be inserted into the "SOS" socket on the AVL machine as shown in Fig. 5. The connection cable should be fastened along the routine.

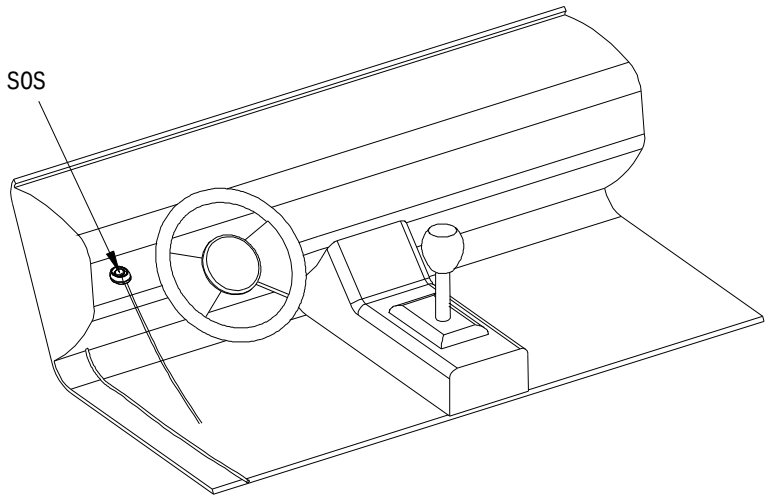


Fig. 5

Note: The places to mount the SOS button vary with the brand of car; however, consideration should be give to easy and convenient operation by the driver.

1-3-6、Connecting the Power Supply

As shown in Fig. 10**,** clamp the red cable to the positive post of the car battery, the yellow cable along with fuse to the ACC position of the start or the power supply of car and the black cable to the negative post of battery or the car, the other end of 3 pin plug links to the "POWER" socket on the AVL machine as shown in Fig. 2.

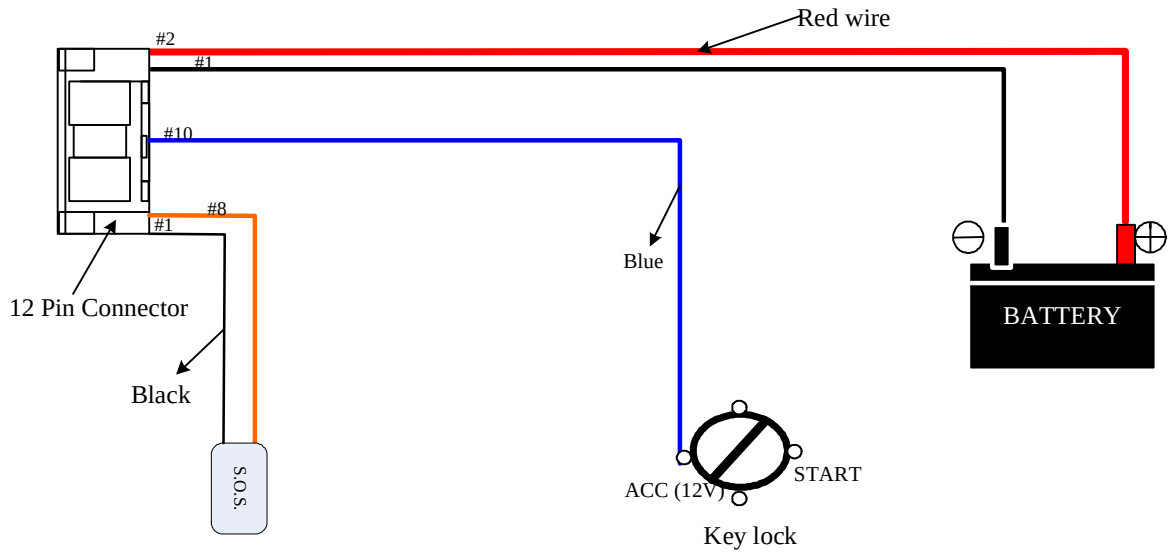


Fig. 11

Power

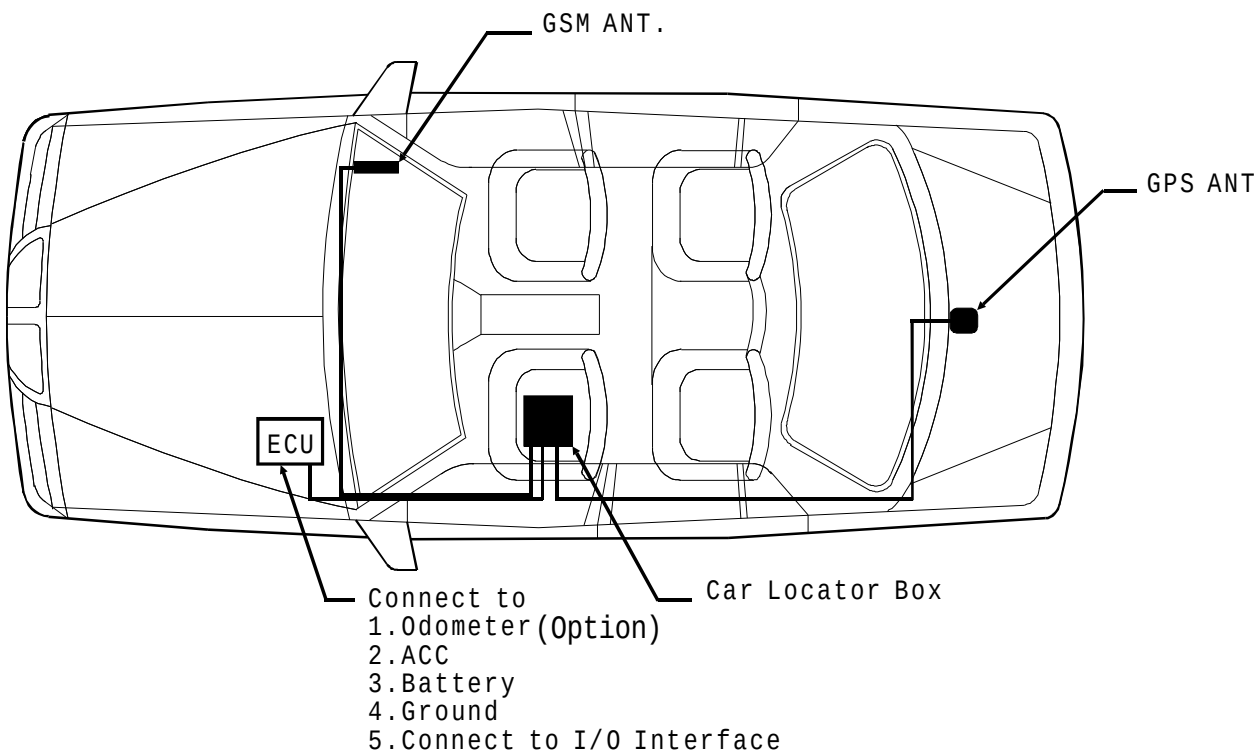
The standard power supply for this devices is +9V/+36V, the red (1)line is the power positive pole, black (2) line is negative pole; the power positive pole should never be used together with the following devices:

- Ø Vehicle battery cell
- Ø The ignition switch of the car
- Ø Other anti-theft devices

1-3-7、Fixing the Main Machine

A. **For sedan**：

Paste the hook tape of Velcro on the bottom of AVL machine and the loop tape of Velcro on the carpet under the driver seat, then place the AVL machine on the loop tape of Velcro as shown in Fig. 6, 10. All cables should be fastened properly.



B. **For truck and van：**

Use lock bolt kits and pass through the lock holes to fasten the AVL machine on the appropriate place in the cab. All connection cables should be fastened properly.

C. The position and the fixation of the unit

1、To avoid the possibility of damage of destroy by the thieves, the unit should be position at somewhere as secret as possible.

2、It should be kept far away from emitting resources such as the back car radar, immobilizer or other vehicle communication devices.

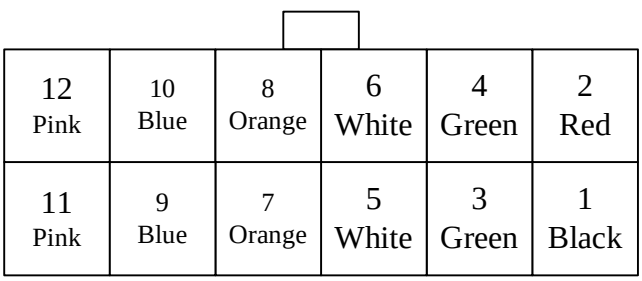
3、It could be fixed by snails or glued by the wide sponge double sided tapes.

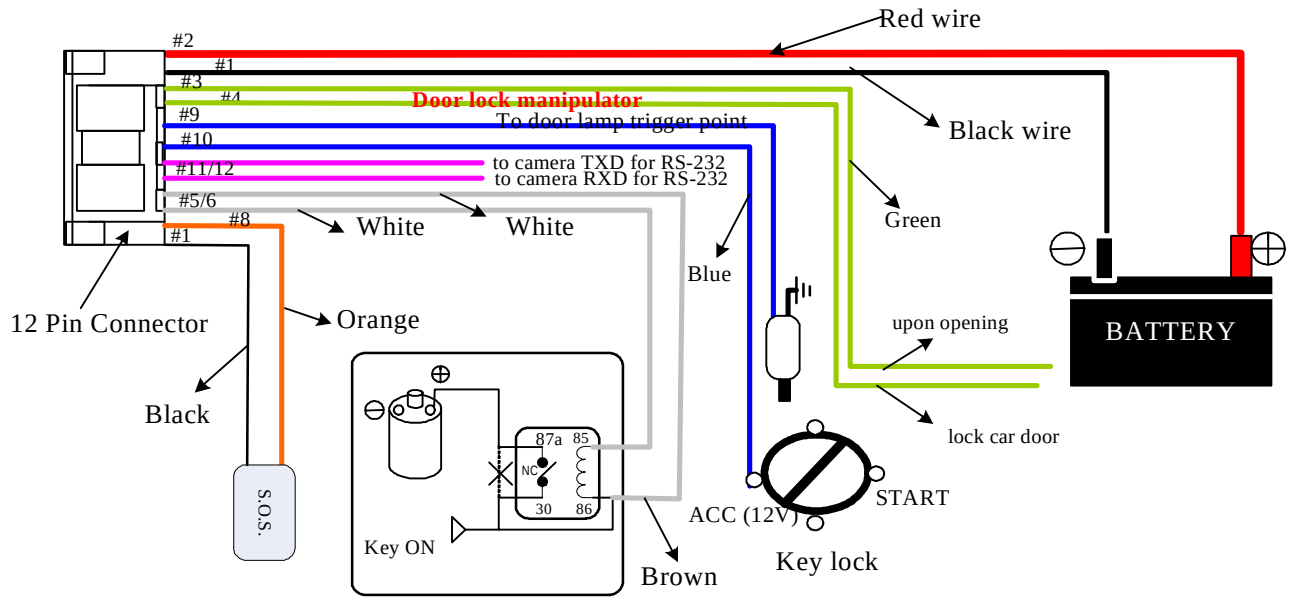
4、Installation positions recommended here are,

- Ø Inside the dashboard in front of the driver's seat
- Ø Inside the dash board in front of the right front seat
- Ø inside the central control box of the car

1 -3-8 . Application with Accessory Installation

Pin	Define
1 （Black）	**Power -**
2 （Red）	**Power+**
3 （Green）	open car door
4 （Green）	lock car door
5 （White）	to the cutting off oil circuit relay
6 （White）	to the cutting off electricity relay
7 （Orange）	**spare usage**
8 （Orange）	to Emergency alarm button
9 （Blue）	❙ To Door switch, if signal input is Negative. ❙ If signal input is plus, will here an external relay should be connected.
10 （Blue）	ACC）car key switch line(ACC)
11 （Pink）	RS232 camera TXD
12 （Pink）	RS232 camera RXD





※ **Emergency alarm button**

Draw the emergency alarm button lead to the position under the left side flash board in front of the driver's seat, then installed it there and hide the lead.

※ Door lamp triggering upon opening

- Ø Find the triggering point of the lamp inside the compartment upon which when any one of the 4 car doors is opening the lamp will light up.
- Ø Check by the Triple-Purpose Meter

If It's sure that the mode of triggering for the point is Negative trigger (that is: when the door is open it is 0V, and +12V when the door is closed), then connect that point with the blue line。

If it's sure that the mode of triggering of that point is Positive trigger, (that is: when the car door is open, it's +12V, when the car door is closed, it is 0V), then an extra relay will be necessary to be connected between the blue line and that point.

※ Flameout control of the engine

Find the power supply end of the fuel pump in the car, and cut it into two parts, then connect the two ends to the two connect the two flameout control lines to the normally closed contacts respectively, then connect the two flameout control lines(the yellow line,the brown line) to the cuttting off fuel and electricity relay. Here please see to it that the connection points should be wrapped by the insulating tape to avoid earthing and shortcircuit.

※ The installation of the relay:

- Ø There are 5 output lines on the relay, marked as: **85，86，87，87a，30**
- Ø **85** and 86 should be connected to the power and the yellow or brown line on the unit

- **87a** and 30 are normally closed contact, cut the fuel line into two parts, and connet the two ends to 87a and 30 respectively.
- **87** should be connected to nowhere.

1-4、Test After Installation

Upon the completion of installation, check to see all peripheral accessories are properly fastened. Turn on the power. After 5 minutes, you can check the coordinates of car through GPRS network. Finally check the working condition in accordance with the call center.

2． The initialization and adjustment of the device

Note: all that described here are only for the AVT-2000 basic type products.for further information please see the checking list of the function differences between AVT-2000 series products and the checking list of AVT-2000 series products Packing lists

2-1.The tests could only be started after correctly finishing all the installation steps

2-2. Please test and run the devices in strict accordance with the steps listed below, don't mix up.

2-3. Insert the power wires into the corresponding Socket and electrify them, then observe the working indicators on the unit:

- The red led on the front side of the unit is the GSM status indicator:

  Normally, after connecting to the power, the red led will light on twice then lighting-off, the first time the indicator lights up, it is searching for GSM signals, the second time the indicator lights up, it is searching for GPRS connection, if everything goes well, the red led will lighting-off, As normal operating conditions', if phone is used to make or receive phone calls or messages in each time, the red led will lights up once.

- The green led on the front side of the unit is GPS status indicator:

  Normally, after power on the indicator will light up once then go off. 5-10 seconds later, the green led will start and keep on flashing regularly, this means that the GPS is searching for the signals from the satellites and starting initialization.

  About 3-20 minutes later, the led will stop flashing and goes into the constant ON status, this means that the GPS has already received the GPS signals and is working normally. After all these changes of the indicators, the unit will enter into idle status.

2-4. After all the above steps, please tidy up all the wires and lines and restore the vehicle back to the original appearance. The devices could be put into normal use now.

GPRS Functions setting methods :(Center → Locator)

1. How to set the IP address and the ID number for the GPRS Locator unit

First of all, insert the SIM card into the unit, after connecting all the output function lines, and then electrify the system. After that, send a message to the SIM card in the unit to set the IP address and the ID number. Within three minutes the unit will automatically send a null packet to the IP address you set in the message to test whether or not the system has been connected successfully. Details for all the other functions please see the GPRS protocol commands. You may also edit message and send it to the SIM card in the unit.

For example, if your cell phone number is: 13810973291

The IP address provided by the seller is: 211.167.253.2

Port number: 8280

Then you may edit message context:

=00P211.167.253.2:8280, 13810973291E

And then send it to the SIM card in the unit. Normally, the unit will automatically reply the message, the message sent back, the content is the IP address and ID number information, and you may check whether or not it's correct. (Please pay attention to the format of the example message context above. The IP address should be separated from the port number by ":", while there should be "," between the port number and the cell phone number.)

2. How to setting APN

Send Command by SMS : =00 Nemome!

Example:

=00N…is message had.

"emome" is APN of Taiwan

Within three minutes the unit will automatically send a null packet to the IP address you set in the message to test whether or not the system has been connected successfully. Details for all the other functions please see the GPRS protocol commands.

And then send it to the SIM card in the unit. Normally, the unit will automatically reply the message, the message sent back, the content is the IP address and ID number information, and you may check whether or not it's correct. (Please pay attention to the format of the example message context above. The IP address should be separated from the port number by ":", while there should be "," between the port number and the cell phone number.)

3.About the SIM card

The SIM card inside the unit, we recommend the SIM card with complete GPRS network transmission functions issued by Mobile Communicator company .

3、Simple breakdown obviate

Failures, trouble shooting and maintenance

3-1.1. If you encounter a problem, please contact your support representative for repairs.
All the damages caused by the connection to the non-original accessories or disconnecting the cables between the various parts, the manufacture will not take the responsibilities.

3-1.2. This equipment should not be used within damp environments, especially during the course of car washing, please make sure that there is no water splashed inside the equipment.

3-1.3. When the car is located inside buildings, cave, tunnel or near high buildings, the GPS satellite signals and the receiving of the GSM communication network signals will be effected, this will sometime make it's impossible for the equipment to work normally. When the car is driven outside the above environments, the equipment will automatically restore to normal working.

3-1.4. After the power on, the indicator doesn't light up:

- Ø Quickly unplug the power plug, and check the voltage;
- Ø Check the electrodes of power cord, whether or not it's correct.
- Ø Check the positive of the power cord and the Negative grounding wires, whether or not they are fast enough.

3-1.5. Instable GSM signals:

- Ø Check the local network signal, whether it's normally working, check the balance of the SIM card;
- Ø Check the GSM antenna and see if it's still good, and check the connection with the unit, whether it's fast enough;
- Ø Check the GSM antenna; it should not be set at a closed, shielded position.

3-1.6 Long time there is no GPS signals:

- Ø For the newly installed GPS receiver, comparatively longer time will be necessary to complete the initialization, normally, about 10 minutes there is no GPS signal will be normal;
- Ø There should be no Metal defilade above the GPS antenna, please drive the car out of the garage and far away from high buildings;
- Ø Check the connection between the GPS antenna and the unit, whether it's fast enough.