Vehicle GPS Tracker HB-A5W (3G Network)

Product Manual
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CONTENT

1. Product overview

HB-A5W GPS vehicle tracker is an easy install, stable & reliable and low power consumption device, it can connect to external panic button, Relay for remotely fuel cut-off, handset, Fuel sensor etc. This device is 3G network module. Especially suitable for logistics, long-distance passenger transport, and dangerous goods transport, bus companies, vehicle rental, taxi and other industries.

2. Product features

◇ **Real-time location**: Users can get real time vehicle location via PC, Mobile APP, or SMS.

◇ **3G data network:** This device is using high level 3G module, it can cover 2G and 3G network.

◇ **Built in GPS/GSM antenna:** This device is using built in GPS/GSM antenna, it is easy for installation and customer can hidden it.

◇ **Trace playback:** User can playback the history trace through PC or Mobile APP.

◇ **Configuration through GPRS/SMS:** The device support to configuration through GPRS(PC or Mobile APP) and SMS, please find the SMS command list in 7.1.

◇ **Ignition detection**: This device can detect the vehicle ignition status ON/OFF

◇ **Remotely fuel cut-off (Relay)**: When the vehicle is stolen or the user doesn't use the vehicle regularly etc., can make the driver cannot start the vehicle by remotely lock or unlock the vehicle.

◇ **Good expandability:** This device has RS232 port, IN/OUT port and 1@wire port, can connect to panic button, fuel sensor and temperature sensor. It is good and necessary features for fleet management.

◇ **Power off alarm:** This device can detect the status of the main power connection, it will send message or alarm if the main power is disconnected.

◇ **Backup battery**: This device has back battery, when the main power supply is off, backup battery can supply power to the device and continue send data. Support work for 1-2 hours.

◇ **SOS alarm:** This device can connect with panic button to generate SOS alarm through GPRS or SMS

◇ **Over speed alarm:** This device will generates over speed alarm through GPRS or SMS when the vehicle speed is exceeding the MAX speed pre-configured.

◇ **Various reports:** This device can provide various data for the reports purpose, such as mileage report, trip report, speed report etc. It is customizable in the monitoring platform, please contact the dealer for more details.

◇ **OEM/ODM:** This device support OEM/ODM business mode, please contact the manufacturer for more details.

◇ **OTA:** This device firmware can be upgraded over the air.

Functions		HB-A5W	Note
Communication	2G	850/900/1900/2100MHz	
	3G	850/900/1800/1900MHz	
	4G	○	
Positioning	GPS+BDS	GPS/BDS	
Functions	Real-time positioning	●	Configurable transmission time. The default setting is 20 seconds/ 1 data.
	Dead zone	●	Record 800 pieces of backup data.
	Mileage statistics	●	
	Remotely fuel cut-off	●	Disconnect vehicle power via relay.
	Detection ACC	●	
	Power off alarm	●	Main power outage
	Low voltage alarm	●	Read vehicle voltage, alarm when below 9V.
	Emergency alarm	●	Panic button
	Ex-speed alarm	●	
	Vibration alarm	○	Can support adding through upgrade program
	Displacement alarm	○	
	Area management	○	Platform functions assist docking.
	Line management	○	Platform functions assist docking.
	Domain name access	●	The platform displays the domain address, instead of the server address. For example: https://168.75.10.225:8080, which is displayed as https://www.abcde.com
	Multiple servers and platforms	○	Device data points to multiple servers and platforms.
	Remote upgrade	●	OTA
Interfaces	ACC	1	Connected vehicle ACC
	Fuel cut-off	1	Connected relay
	Emergency alarm	1	Connected panic button
	MIC (Optional)	○	Standard version does not support. Can add if project needs.
	RS232	2	1 of Fuel sensor, 1 of Computer data cable
	1-wrie	1	Temperature Sensor

3. Product specifications

Communication module (MTK 6276)	WCDMA: 850/900/1900/2100MHz GSM: 850/900/1800/1900MHz
GPS Parameters (ublox-G7020)	Sensitivity：Location:-162dBm ; Capture: -148dBm
	Based on 64 channel Humbird™ chip UM220-III N high sensitivity location chip
	Frequency：GPS L1BDS B1
	Location accuracy：<10m
	Cold start:30s Hot start: 1s
Speed accuracy	<0.1m/s
Accelerated speed accuracy	< 4g
Working temp	-20℃～ +70℃
Store Temp	40℃～ +85℃
Humidity	5% ～ 95%
Battery	180mAh rechargeable lithium battery, 3.7V, work 2 hours.
Work voltage	9V～36V
Power consumption	1W～1.5W
Work current	80mA
Port	2*RS232 (1 of Fuel sensor, 1 of Computer data cable) 1*5V output 1*SOS port 1*Relay connection 1*Input for Ignition detection 1*Input 1@Wire
Size	100 * 50 *16mm
Net Weight	100g

4. Product connection port

4.1 Port 1---Power port

No.	Cable color	description
1	Red	Power (+12/+24V)
2	Black	GND
3	Orange	Ignition detection
4	White	CUT-OFF

4.2 Port 2---Serial port

No.	Cable color	description
1	Purple	One wire (Temperature Sensor)
2	Yellow	RS232-RX (Fuel Sensor)
3	Blue	RS232-TX (Fuel Sensor)
4	Orange	5V
5	Black	GND
6	Green	SOS

4.3 Port 3---Monitor port

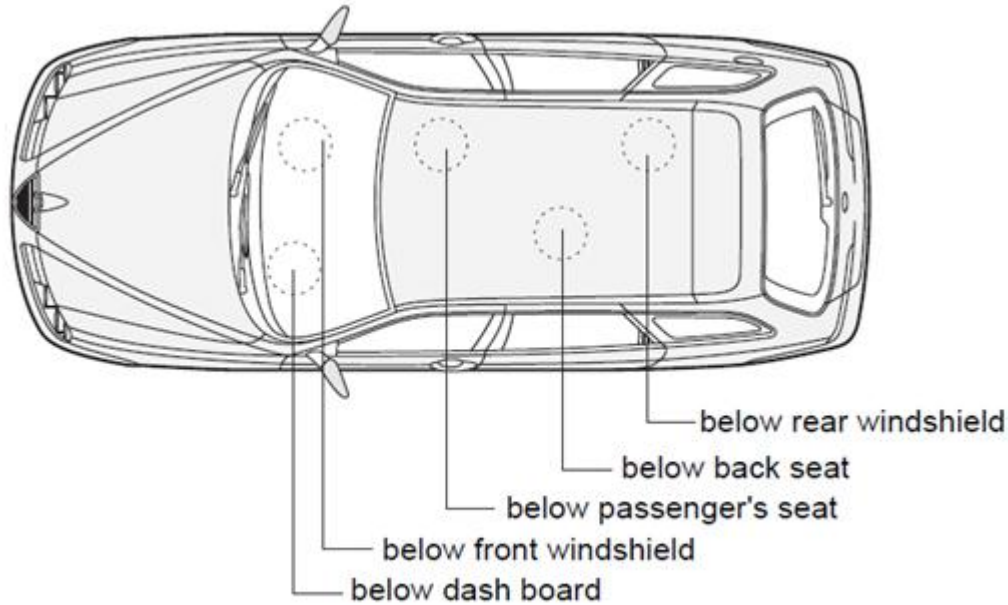| No.	Cable color	description
1	Gray	RS232-RX2 (Serial cable) / MIC (Optional)
2	Brown	RS232-TX2 (Serial cable) / MIC (Optional)

5. LED Light status description

Description of indicator light		
Power	Red Light	Light Always-on: Working Fine No Light: Shut Down
GPS	Blue Light	Flashing Every 2s：Searching GPS Signal Light Always-on：GPS Positioned No Light：GPS Sleep
GSM	Yellow Light	Flashing Every 2s：GSM Initialization Light Always-on：GPRS Communication Normal/Been Online No Light：GSM Sleep

6. Product installation

6.1 Installation position

6.2 SIM Card Installation

The device needs to work with a SIM card. Please make sure the SIM card has the following functions:

(1) Already activated the GPRS and SMS function.
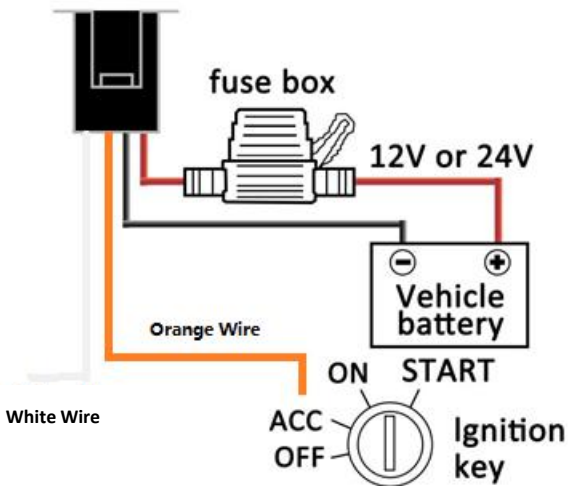
(2) Have enough remaining credit.

(3) PIN code removed.

Steps:

(1) Open the top cover of device

(2) Disconnect the built-in battery by turn OFF the switch.

(3) Insert the SIM card to the slot according to the direction instruction.

(4) Connect the built-in battery by turn ON the switch.

6.3 Power connection---Port 1

The standard input voltage of the device is 12V-24V (Note: Please check the working voltage of the device to avoid any damage. If higher than this voltage, please choose the suitable power adapter.) The Red line is power positive, Black line is power negative. Please choose the negative to connect ground or metal separately.
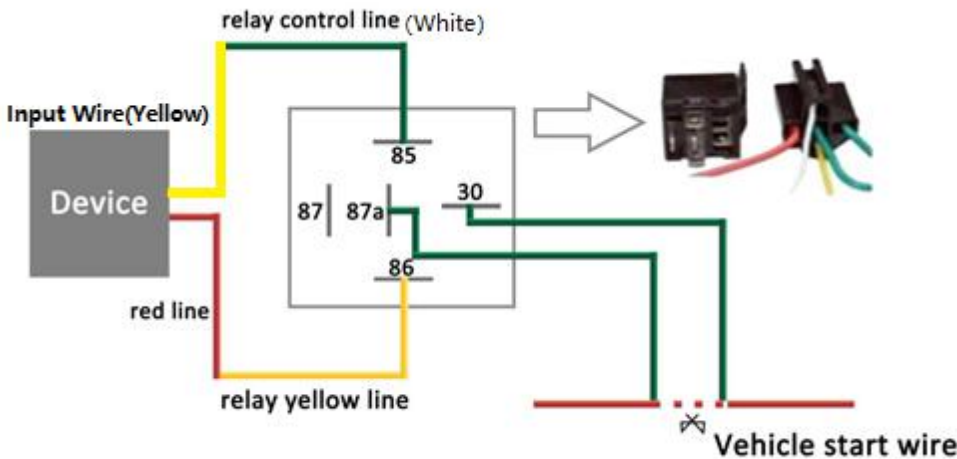
(1) Red wire connect to vehicle power Positive Pole.

(2) Black wire connect to vehicle power Negative Pole.

(3) Orange wire connect vehicle ignition line.

(4) White wire is for controlling the engine

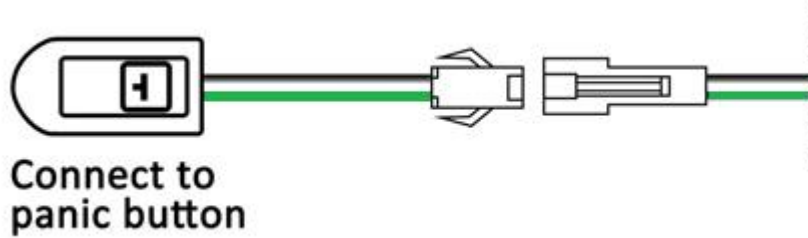## 6.4 Relay Installation for fuel and power cut off---Port 1 Pin4

The Relay is an optional accessory. There are two types relay: 12VDC and 24VDC. Please choose the correct type before installing Relay (Please use power meter to detect the vehicle voltage to choose the correct type of relay). Connecting method:

(1) Port 1 Green line connect to relay 86 feet

(2) Relay 85 feet connect to main power supply of the vehicle.

(3) Cut the fire wire of the vehicle, tandem connect with the Relay two green wires. .(Usually to realize remotely fuel cut-off via controlling to cut ignition wire.)

6.5 Panic button installation---Port 2

To connect the panic button, please find the port 2 pin6 Green line is the panic button signal line, port 2 pin5 black line is GND, Connect SOS button to Port2 Pin6 and Port2 Pin5, Press the SOS button for 3s will trigger SOS alarm.

Connect to panic button

Notes:

The device should be installed hiddenly, before installation, please pay attention to the following:

(1) The device have built-in GSM and GPS antenna, please make sure the front side up and no metal shelter when installing. (Glass and plastic are without influence.)

(2) Avoid putting close to the heat and emission source, such as engine, controller, reverse radar, burglar alarm and other vehicle communication device.

(3) Suggest fixing via magic sticks, double sided foam tape etc.

(4) Please do not install this device to the vehicle whose battery is not in good status.5) All SMS alarms are close as default.

7. Operation steps

7.1 Basic parameters setting

After the installation complete, there are some configuration is necessary for make the device working online, we suggest to use SMS command to do the configuration, the user will need to send the following command to the device by SMS:

Command	Command Explain	SMS Command Sending Samples	SMS Command Response
Set APN	APN means access point name	#000000,STAP:APN eg.: #000000,STAP:m2m.onelink	Set Okay!
Set IP and port	Set the IP and port to make the device send data to the server	#000000,STIP:IP,PORT eg.: #000000,STIP:218.30.35.115,7008	Set Okay!
Set Interval	Send this command to configure the time interval for data uploading	#000000,STIN:30,600 (Notes: Second only: ACC ON, 30s; ACC OFF, 600s)	Set Okay!
Set Time-Zone	Different country with different time zone, send this command to set the time zone	#000000,STTZ:hour:minute eg.: #000000,STTZ:+8	Time zone

7.2 Basic function operation

- **Read Location through SMS**

Please edit SMS send to the SIM which inside the device

Command format is : #000000,RDDL

Then the device will respond a command to the mobile phone together with location information.

Example:

1036 Nan Xin Lu,Nanshan Qu,Shenzhen Shi,Guangdong Sheng, China,518052

Not Located,URL:http://maps.google.com/maps?q=N22.515370,E113.916970

- **Remotely cut off fuel and power**

Please edit SMS send to the SIM which inserted inside the device

Command format is : #000000,STOC:CUT

This command will valid only when the vehicle speed is less than 20KM/H for security, and the command will not cut off the fuel and power complete in a short, it is a gradually process.

- **Fuel and power recover**

Please edit SMS send to the SIM which inserted inside the device

Command format is: #000000,STOC:OK

The vehicle fuel and power will recover after send this command.

- **Over speed alarm**

To use the over speed alarm function, first of all need to set the speed value，the device will send over speed alarm based on the settings

Command format is : #000000,STMA:

For example, if set speed value as 80km/h, the command should be: #000000,STMA:80

- **Power off alarm**

Power off alarm can be send to server through GPRS .

- **Reset device**

Device can be reset

Command format is : #000000,REST

- **Read device parameters and status**

If customer want to read the device basic parameters in one message and check the network/GPS status, there is a command is available for it

Command format: #000000,RDST

- **OTA Remote Upgrade**

Please Give your device IMEI number to distributor, It's updated from our update server.

HB-A5W	Reply content on success
#000000,RDST	V:HB_A5W_1.3 200701, //Program version No ID:0868817040089672, //Device ID IMEI:40572930558, //Device IMEI ICCID:898604132218C0033412, ////SIM ICCID TID:0000000, //Terminal ID ACC:0, //ACC status IP:183.62.139.75,6608, //IP&Port APN:CNNET, //APN NET:OK, //Platform link status ON:10,OFF:300, //ACC ON/OFF Upload interval CSQ:18,GPS:0, //GSM signal strength and GPS satellites TZ:+0,0//Device time zone
#000000,STIP:211.103.40.133,7788	SET OK! IP:183.62.139.75 PORT:6608
#000000,STMA:100,10	SET OK! MA:100,10
#000000,STIN:30,600	SET OK! IN:10,102
#000000,REST	SET OK! APN:CMNET
#000000,STOC:CUT	CUT: Set oil off ok!
#000000,STOC:DIRECT	DIRECT: Set oil off direct ok!
#000000,STOC:OK	RELEASE: Set oil Release ok!
#000000,STTZ:+8	SET OK! TIMEZONE:+8
#000000,STAP:CMNET	SET OK! APN:CMNET
#000000,STMA:80	SET OK! Over-Speed value:80km/h
#000000,RDDL	ID:40572930558 Spd:042 T:20/7/1 12:10 bat:100 http://maps.google.com/maps?q=N22.58733,E113.99550

8. FAQ

8.1 Equipment Non-online

(1) Inspecting the equipment signal light, it shows general server connection normal when green GSM signal light keep on; It shows SIM card loose or no connection with server when this light flash every 1 second, and it can be tried to shutdown and install the SIM card again.

(2) Please try to dial SIM card number if the SIM card possesses phone call function. And it will be call through automatically in general; It can be tried to shutdown and install the SIM card again when it prompts power off or "can not be connected for the moment.

(3) Please contact the technical personnel to assist disposing and rework, if both the green signal light and phone call function are normal and the equipment still be non-online.

8.2 Can not Location after Equipment Online

(1) Inspecting the equipment signal light after equipment power on, it shows successful location if the yellow GPS signal light flashes once each 1 seconds; it shows non-location if this light keep off, in this time, please confirm whether GPS ceramic side is upward, whether there are metal objects surrounding the equipment.

(2) Please restart the equipment, and set it on open outdoor ground, supplying power by built-in battery and Check if it can locate successfully, when installation and location of equipment are all correct.

(3) Please contact the technical personnel to assist disposing and rework, if it still can not locate in open outdoor ground.

8.3 Equipment Off-line when Operation

(1) Confirm if the SIM card is in arrearage at first;

(2) Please try to dial SIM card number if the SIM card possesses phone call function. And it will be calling through automatically in general, in this time, it can be sent short message(#000000,REST) to the equipment for restarting; if it still can not be on-line after restart, please check the equipment and restart manually.

(3) There is possibility that the vehicle is located in underground garage and other place with poor signal, if the dialed phone prompts power off or "can not be connected for the moment". When the vehicle comes out from the underground garage, the equipment will recover network and be on-line automatically; Please check the equipment and restart manually if it is confirmed that the surrounding situation is well and there is driving during off-line. The surrounding situation is well and there is driving during off-line.

(4) Please contact the technical personnel to assist disposing and rework, if it still can not be on-line after restart the equipment manually.

8.4 The Accuracy of Satellite Location is not enough.

(1) Please confirm the equipment is in on open outdoor ground or there is no metal cover on the installation place of GPS antenna.

(2) The accuracy of satellite location is about 10m, accuracy is not enough because the equipment has been transferred in indoors. It will be changed to base station location in indoors, due to the double models of location including GPS and base station. The accuracy of base station varies from 50m to hundreds of meters according to the base station density in its environment.

● False Login when login the system, appearing non-existence of this IMEI No. or client account. Please

contact the customer service and add this IMEI account into the system.

9. After sales service

● The customers can choose refunding, changing or after-sale service if it appears performance failure in this product within seven days purchasing the products.
● The customers will receive free guarantee service if it appears non-factitious damage false within one year purchasing the products.
● The guarantee card shall be provide when need guarantee service. Our company have the rights to handle as no guarantee, if this card can not be provided or this card is altered privately.
● It will void guarantee if it is included in the circumstance below. And the maintenance can be provided by our company, charging the cost price of spare parts.
(1) Equipment damage due to human factor.
(2) Product damage due to false wiring.
(3) Equipment damage due to non-compliance with this Operation Instruction.
(4) Equipment damage due to force majeure including natural disasters, lightning stroke and etc.

10.   Packing list

Device	1PC
Power cable	1PC
6 Pin cable	1PC
QC certificate	1PC
Relay	Optional
Panic button	Optional
Temperature Sensor	3/5/8/10 m Optional
Fuel Sensor	Ultrasound/Punch Optional

Warranty Card

User Name			
Phone number			
Address			
Model		Product ID	
Purchase Date		Sales person	
Distributor Name			
Distributor Address			
Remark			