AOT SOLUTIONS

AOT120 User Manual

GSM\SMS\GPRS\GPS (Version 1.3)

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Change Log

Specification

GSM	MTK Chipset (MT6261D)
GSM Band	Quad Band 850/900/1800/1900 (Global World)
GPRS	CLASS12,TCP/IP
GPS	MTK Chipset (MT3337)
GPS Start	Cold start: 38s, Hot start: 2s (Open Sky)
GPS Positioning	5m (2DRMS)
Voltage Input Rang	9-100 VDC
Current Consumption	3.5mA @ 48V
GSM Antenna	Built-in GSM Antenna (Commercial Stander)
GPS Antenna	Built-in GPS Antenna (-148dBm to -162dBm)
Memory	128M
Internal Battery	Paper lithium, 200mA, 85 ^{0}C
Temperature	-10 to +80 ^{0}C
Humidity	20% - 80% RH
Dimension	67(L)mm*38.8(W)mm*11.5(H)mm
Weight	30g
Reports	CE, EMC, EMI, RoHS, Safety Test Report.
Certified	ISO, GSMA
Approval	Approved from PTA (Pakistan Telecommunication Authority)

Basic Hardware Features

- GPS satellite & LBS dual model positioning
- Number of available GPS satellite
- GSM Signal Straight (level 0-6)
- Max Input voltage 100
- Main and backup battery Voltage measuring
- Very low current consumption for saving main Battery power (only 10mA Working Mode at 12V)
- Sleep Mode function for low current consumption
- Auto wake up from sleep mode (on ACC ON or Vibration detection or sleep mode timer)
- Built-in auto Backup battery charging controller (PWM)
- Hardware GEO-Fence Alert
- Hardware Over Speed Alert
- Built-in hardware watch dog timer
- Internal memory 128M (more than 1000 location save when device is in non-coverage area)
- Auto reboot on malfunctions
- Stop, moving and sleep mode adjustable timing separately
- Time base alarm send to remote server
- Angle alarm send to remote server (20 degree by default)
- Vibration alarm (sensitivity is adjustable from 1 to 5)
- ACC detection (+ve)
- Engine Kill and Release function (Less than 20 speed by default)
- Battery Tempering

Usage of Device

AOT120 is used for following auto mobile:

- Car (4 Wheels)
- Van/Pickup
- Truck (Light Weight)
- Truck (Heavy Duty)
- Dumper
- Paver Machine
- Milling Machine
- Motorcycle
- Electric-bike (2/3 wheels)
- Rickshaw (2/4 Stock)
- Mobile Generator

Indication of LEDs

NOTE：For covert protective, the LED status will be invisible after installing the back cover.

RED LED *(Power status indicator)*

Power LED status	Description
Quick flashing	Working normally (working on main Battery)
Slow flashing	Working normally (working on backup battery of device)
Continuously ON	Device Error
Continuously OFF	Device Error

BLUE LED *(GSM status indicator)*

GSM LED Status	Description
Quick flashing	Working normally, uploading GPRS data to server
Slow flashing	Working normally ,receive GSM signal normally
Continuously ON	No GSM signal
Continuously OFF	GSM Error

GREEN LED *(GPS status indicator)*

GPS LED Status	Description
Quick flashing	Working normally , GPS Lock
Continuously ON	Searching GPS signal or satellite
Continuously OFF	GPS Error

Installation

Preparation before installation:

- To test SIM card, please install it into a normal GSM mobile and ensure it can send and receive SMS, and enables for GPRS.
- SIM installation, refer to below pictures.

Note: ***Power off before installing or removing the SIM card.***

Notice of Installation:

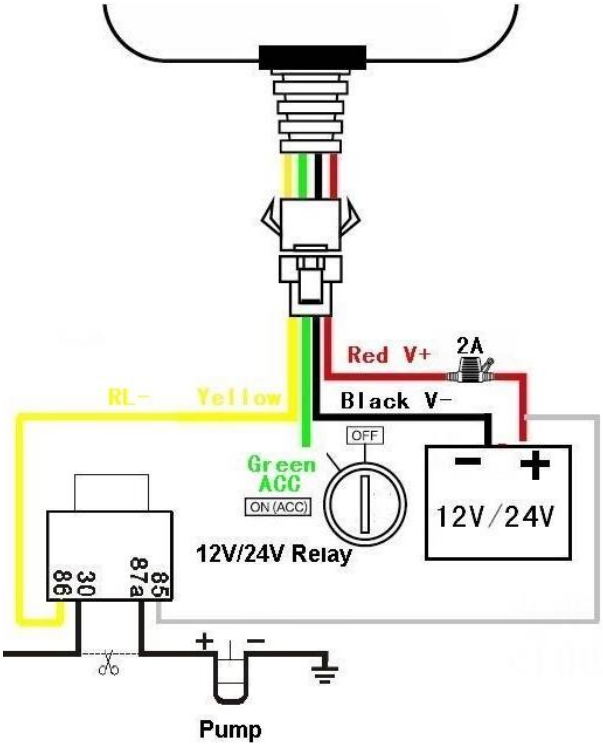
To prevent theft of the Device, the device should be installed as covertly as possible.

Notice as following:

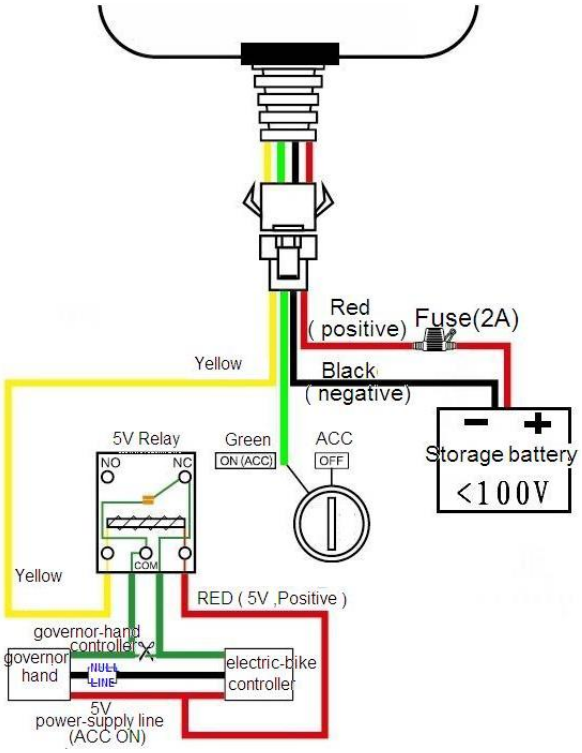
- Ideally must be installed in open area (Sky view)
- Device has built-in GSM antenna and GPS antenna. During installation, please make sure the receiving side face is up, with no metal object above the device to interfere with GPS reception.
- Avoid placing the Device close to higher power electrical devices, such as reversing radar, anti-theft device or other vehicle communication equipment.
- The Device should be fixed into position with cable ties or wide double-side tape.
- For safety, do NOT remove the fuse of device cable.
- Avoid installing near heat generation parts.
- Do not connect wires with the car control wiring

Wiring Diagram:

FOR CAR



FOR Motor Bike



Steps of installation

- Open the back cover, insert a SIM card to SIM card slot
- Switch backup battery power button up (power on)
- Connect the power code with the interface of device
- Now three LED lights will lighting
- Make sure the receiving side faces up, without any metal object shelter
- The LED lights will flash after 1 to 5mins. It shows working normally
- Close the back cover
- Please ask professional technical to connect wires and install to the vehicle.
- After correct installation, the RED LED will flashing, 1 min
- Later the BLUE LED will flashing too

Cautions of device wiring:

Power code wiring:

The standard voltage is 9V-100V. Please use the power line which provided by the manufacturer. The red line is the positive. The black line is the negative. The negative should earth alone or link iron during installing. Do not connect it to other ground wire. And please make sure the device is powered on status. (Power button on down position)
Red LED light will flashing while device installed correctly, GSM Blue LED light and GPS Green LED light will flash around 1 minute later after getting signal.

SMS Commends

- User can set different kinds of function commands via sending message, including check position, cut engine, etc.
- Below commands and punctuation marks must be putted under English status.
- All commands will get auto replies according to the message sent.

Note device with initial password 6666

NO	Features	Commands	Reply from device	Remarks
1	Add Authorize Numbers	#Password#AAD#1#Cell No#	ADD admin account 1 ok!	Example：**#6666#AAD#1#03001234567#** Authorize #1 is：03001234567 same as add authorize number 2
		#Password#AAD#2#Cell No#	ADD admin account 2 ok!	
2	Delete Authorize Numbers	#Password#DAD#1#	Delete admin account 1 OK!	Example：**#6666#DAD#1#** Authorize# 1 is deleted, same as delete authorize number 2
		#Password#DAD#2#	Delete admin account 2 OK!	
3	Password Change	#old Password#CP# New password#	Change password OK!	Example：**#6666#CP#1234#** Changed password is 1234
4	Time Zone	#Password#STZ#E5#	Setup Time Zone OK!	Example：**#6666#STZ#E5#** E5 Pakistan time zone
5	Kill Engine	#Password#CF#	Engine Cut, OK!	Example：**#6666#CF#** only apply from Server numbers *Note: Fuel will Cut OFF less than specified speed limit (Default is 20)*
6	Release Engine	#Password#OF#	Cancel Engine Cut, OK!	Example：**#6666#OF#** only apply from Server numbers
7	Active vibration alarm	#Password#SSA#levels#	Set vibration Alarm, OK!	Example：**#6666#SSA#2#** 1= most flexible 2= standard level 3= lowest level
		#Password#CSA#	Close vibration Alarm, OK!	Example：**#6666#CSA#** cancel vibration alarm
8	SMS Alert	#Password#SMSA#1#	SMS alarm en=1 - Open OK!	Example: **#6666#SMSA#1#** 1= Enable SMS Alert 0=Disable SMS Alert
9	Device Status	#Password#VINFO#	Reply: Device all set parameter	Example: **#6666#vinfo#** For checking IMEI, status and Battery voltages, Authorize numbers

10	Over Speed	#Password#SOSA#Speed#	Set Over speed alarm, OK!	Example：**#6666#SOSA#100#** Device will send SMS Alert when vehicle goes over set speed.
		#Password##COSA#	Close Over speed alarm, OK!	Example：**#6666##COSA#** Cancel over speed alert
11	Setting sleep mode time	#Password#SLEEP#TIME#	Open Sleep Mode OK, Activation Interval:10 Minutes!	Example：**#6666#SLEEP#10#** This mean device enter sleep mode every 10 minutes when Ignition will OFF and device will exit sleep mode when ACC ON or Vibration. (Time rang:1-99999 minutes) *Note: 0=disable sleep mode*
12	Setting time Tracking on movement	6666#SMT#sendconds#	Set movement uploads time, OK!	Example：**#6666#SMT#30#** Here the unit is 30s (10 to 250s)
13	Setting time tracking on steady status	#6666#SST#minutes#	#6666#sst#3#ok!	Example：**#6666#SST#30#** Here the unit is 30 min (1 to 180)
14	Google link	#Password#GL#	Reply: Google Link, Latitude, Longitude, Date/Time and Speed	Example：**#6666#GL#** Get the current Location of longitude, latitude and speed of the vehicle with Google link.
15	Fence Setting	#Password#fence#area in meter#	Set Geo-Fence OK, The Redii:500 Meters!	Example：**#6666#fence#500#** It means 500 meter radius from current location. ***Note:*** *Only for fence out, Command automatically disable after cross the Fence.*
		#Password#fence#0#	Disable Geo-Fence OK!	Example：**#6666#fence#0#** Zero mean disable or cancel fence area
16	Set APN	#6666#sapn#APN Name#user#password###		Example： **#6666#sapn#telenor#internet#internet###**
17	Set IP	#6666#IP#IP#Port#		Example：**#6666#IP#111.222.333.444#1234#** Setting server IP and port.
18	Re-start device	#6666#Reset#	Start Reset System, OK!	Example：**#6666#RESET#** The device will restart after 8~18 min
19	Factory Default	#Password#FactoryALL#		Example **#6666#FactoryALL#** Restoring all to factory default

Sleeping Mode with Power Saving Specifications:

The sleeping mode had been activated and defaulted inside the AOT120.After the car has switched off more than 5 minutes, the device will shut off all the LED, Turn off GPS module and goes to sleeping mode to save the power of the vehicle's battery.

There are 2 methods to exit the sleeping mode:

1) Switch on the ACC，at this time, the green ACC cable is high level up, this will lead device exit sleeping mode.。If ACC is always on high level up,(means ACC is always on) the device will not goes to sleeping mode.
2) Shake the device to make it exit from sleeping mode.

During the first time testing, it is better to connect the ACC wire to high level up to locate the GPS signal fast in the opening area as well as to avoid the device goes to sleeping mode and could not locate the GPS after 5 minutes.

Note: Please do not test in room as no GPS signal inside room.

If client need to turn off the sleeping mode, please send SMS to the device #6666#SLEEP#0# to close this function.

Trouble Shooting

- After installing it in the first time, if device cannot get connected with server, Please check the following steps:
  1) Check whether the connection of power-line is correct,
  2) Check whether SIM card is installed correctly please refers to the installation manual;
  3) Check whether the power switch is toggled to “ON”, the switch is in the left of the SIM card’s slot.
  4) Whether ACC ignition cable is connected, please turn on the ACC with key after it is connected.
  5) Check the LEDs’ status. In normal working status
  6) Check whether GPS is located, if not, please drive to the open areas for positioning.

- If AOT120 is “offline” status in Server, First of all check the 3 LED’s and check the SIM card status:
  1) Call the SIM card number of the device to check whether you can get through
  2) Check whether the vehicle is in no GSM area, such as basement
  3) Check whether the Jamming area of GSM/GPS
  4) Check whether your SIM card charge is overdue
  5) Check whether the SIM card supports GPRS;
  6) Check the parameter setup, whether the device IMEI number, GPRS sending interval is correct;

- If the device’ GPS function is normal, but cannot locate for a long time, please check whether the installation setup of device is correct:
  1) Please make sure the GPS antenna face is up;
  2) Please make sure there is no electromagnetic wave- absorbent object (metal) above the device, especially the thermal-protective coating on the windshield, it may affect the GPS reception of the device;

- If GPS cannot receive the signals normally (there is high building around to interfere with GPS reception), please drive to the open areas for positioning. Generally, it needs 1-2 minutes to receive the first coordinates.

- If GSM cannot receive the signals normally, please check whether SIM card is installed correctly or there is no GSM signal at the location you are, such as basement parking, please drive to a place covered by GSM signal reception.