Airport-wide Motorized Vehicle/GSE Tracking System

Information for AVL Vehicle Owner

Nov 2016

Service Provider:
DigiMobi Technology Limited
4 Types of Subscription Services provided by Airport-wide Motorized Vehicle/GSE Tracking System

Note: Subscription Fee covers installation, maintenance and rental of On-Board Unit under normal use

1) Outdoor Tracking Basic Functionalities Services
- Mandatory Services for vehicle/GSE with AVL licence
- An On-board Unit (comprising GPS Tracker and accessories) to be installed on Vehicle/GSE by professional technician

2) Indoor Tracking Services
- Mandatory Services for GSEs operating inside Baggage Hall
- Have same kind of services as “Basic Functionalities Services” with On-Board Unit comprising additional RFID Tags that work with RFID readers installed inside Baggage Hall

3) Outdoor Tracking Services using Removable Tracker
- Mandatory Services for vehicle/GSE that operates inside Airport Restricted Area without AVL licence e.g. Dump Truck from construction companies
- Have same kind of services as “Basic Functionalities Services”
- On-board unit is an Removable Tracker that does not need installation by professionals

4) Add-on Functionalities Services
- Optional Services with value-added services including (a) Driver Management; (b) Speed Alert; (c) Odometer; (d) Fuel Level Sensor.
- Operating companies can opt for these services based on business needs.
- Note: Add-on Functionalities Services could not be installed on some vehicle types
## Functions for different types of services

### Basic Indoor

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional information for driver, over-speeding alerts, odometer-speed and fuel level report</td>
<td></td>
</tr>
<tr>
<td>Location, Speed and Vehicle status to be updated on Airport Digital Map at User Website every <strong>60 minutes</strong> when engine is off</td>
<td></td>
</tr>
<tr>
<td>Location, Speed and Vehicle status to be updated on Airport Digital Map at User Website every <strong>15 seconds</strong> when engine is on</td>
<td></td>
</tr>
<tr>
<td>Online data storage for up to <strong>30 days</strong> for track replay and report download</td>
<td></td>
</tr>
<tr>
<td>Offline data storage for up to <strong>90 days</strong> for data retrieval</td>
<td></td>
</tr>
<tr>
<td>Email alert based on user-defined exception settings on over-speeding, idling, zone in/out and ignition on</td>
<td></td>
</tr>
<tr>
<td>Indoor zone location inside Baggage Hall</td>
<td></td>
</tr>
</tbody>
</table>

### Add-On

- Removable

**Note:** Subscription Fee covers installation, maintenance and rental of On-Board Unit under normal use.
System Overview and User Website
System Overview

Outdoor Tracking

- **Basic**
- **Removable**
- **Optional Add-on**

Indoor Tracking (Baggage Hall)

- **RFID**

Tracking Platform with Hot Standby

- China Mobile HK (2G Network)
- Internet

User Interface

**GPS**
Website Address: https://aagis.gpsfinder.hk
Updated Airport Map

Airport Map

Midfield Apron Map

Baggage Hall Map

Location Address with Parking Stand#, & Baggage Hall Zone Name

<table>
<thead>
<tr>
<th>Location Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baggage Hall, Arrival Belt Btw 13/14 E</td>
</tr>
<tr>
<td>N20</td>
</tr>
<tr>
<td>E15</td>
</tr>
<tr>
<td>N36</td>
</tr>
<tr>
<td>Baggage Hall, Arrival Belt 7 Infeed E</td>
</tr>
</tbody>
</table>
Dashboard for Real-time Vehicle/GSE Location & Status

**Vehicle/GSE Visual Location**

**Veh/GSE List**

**Search & Filter**

**Map Zoom Level**

**Details of Selected GSE**

**Navigation By Zone/POI**

AVL#, GSE Location Address, Speed, Speed Limit, Engine Status, Sensor Status & Error Code

Real-time Location and Status to be updated every 15 seconds when engine is on; and every 60 minutes when engine is off
Track History Replay for up to **30 Days** of Vehicle/GSE location & status information
Display Icons for different vehicle types
Email Alert for Exception Events
based on User Settings

From: GPS FINDER Alerts [mailto:cs@digimobi.net]
Sent: Thursday, July 23, 2015 2:53
To: xxxxxxx
Subject: PC8xx Idling Time Alert > 30 min

Dear Customer,
PCxx triggered Idling Time Alert with following detail:
Time: 2015/07/23 02:53:03
Location: Passenger Terminal Building Hong Kong International Airport Cheong Lap Kok, S107, South Apron, Near S107
Driver: XXXX
Please remind driver for Safe Driving and Thank You for using our service!

From: GPS FINDER Alerts [mailto:cs@digimobi.net]
Sent: 13 July 2015 22:32
To: xxxxxxx
Subject: VANxxx Airport Zone Overspeed Alert

Dear Customer,
VANxxx triggered Airport Zone Overspeed Alert with following detail:
Time: 2015/07/13 22:30:24
Location: South Runway Road, M9, Maintenance And Long Term Parking Apron, Near M9
Driver: xxxx
Speed/Limit/Excess: 43.50/35.00/8.50 km/hr
Please remind driver for Safe Driving and Thank You for using our service!

Over-speeding and Idling Email Alert Samples
Management Reports for download

List of On-Demand Report

<table>
<thead>
<tr>
<th>Name of On-demand Report available to selected users</th>
<th>Max Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Summary Report</td>
<td>1-Day</td>
</tr>
<tr>
<td>Location Data Details Report</td>
<td>1-Day</td>
</tr>
<tr>
<td>GeoFence In/Out Report</td>
<td>31-Day</td>
</tr>
<tr>
<td>Exception - Event Report</td>
<td>31-Day</td>
</tr>
<tr>
<td>Exception - Details Report</td>
<td>31-Day</td>
</tr>
<tr>
<td>Sensor On/Off Report</td>
<td>31-Day</td>
</tr>
<tr>
<td>Fleet Summary Report</td>
<td>31-Day</td>
</tr>
<tr>
<td>Usage and Distance Report</td>
<td>31-Day</td>
</tr>
</tbody>
</table>

Report will be available in PDF, CSV and XML format. XML file format will be converted to Excel file when opened.
Technical Specifications of On-Board Unit
On-board Unit for Outdoor Tracking
Basic Functionalities Services
To be installed into Vehicle/GSE by DigiMobi’s Technicians

On-Board Unit to be installed:

Technical Specifications of GPS Tracker Model# AT105

<table>
<thead>
<tr>
<th>Mechanics Data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Approx. 103 x 62 x 30 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 220 grams</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrics Data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GSM</td>
<td>Quad-Band 850/900/800/1900 MHz</td>
</tr>
<tr>
<td>Time to First Fix for Cold Start</td>
<td>&lt; 29 Sec</td>
</tr>
<tr>
<td>Reacquisition Time</td>
<td>&lt; 1 sec</td>
</tr>
<tr>
<td>Support A-GPS</td>
<td></td>
</tr>
<tr>
<td>Odometer</td>
<td>DC to 20KHz (5Vpeak to 24Vpeak)</td>
</tr>
<tr>
<td>Input/Output Ports</td>
<td>2 Input Ports &amp; 1 Output Ports</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>External Power Input</td>
<td>DC 9-30V</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Average 120mA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental Conditions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-20°C to +70°C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>5% to 95 %, non-condensing</td>
</tr>
</tbody>
</table>
On-board Unit for Indoor Tracking Services
To be installed into Vehicle/GSE by DigiMobi’s Technicians

On-Board Unit to be installed:

- **GPS Tracker Model# AT105**
  - (for Basic Functionalities)
  - (Obtained OFCA Type Approval Cert.)

- **GPS Tracker Model# AT106**
  - (for Add-On Functionalities)
  - (Obtained OFCA Type Approval Cert.)

**OR**

- **GPS Antenna**
- **GSM Antenna**
- **SIM (2G)**
- **Main Power/ACC Signal Cable with Fuse**
- **RFID Tag**

Only applicable to GSEs operating inside Baggage Hall

RFID Tags shall work with RFID Readers installed inside Baggage Hall.
On-board Unit for Outdoor Tracking Services using Removable Tracker with built-in battery (1)

Technical Specifications

On-board Unit
(with built-in GSM/GPS Antenna & built-in battery):

AC Charger for charging built-in battery:

Technical Specifications of Removable Tracker Model# AT108

Product Design
- Built-in GSM and GPS Antenna
- Battery-Operated with on/off button and AC Charger
- Multi-coloured Lamp to indicate different device status
- Velcro Tape on the bottom to ensure no movement of removable tracker during driving
- Security hologram sticker to detect tampering of removable tracker

Mechanics Data
- Size: Approx. 198 x 90 x 66 mm
- Weight: Approx. 525 grams

Electrics Data
- GSM: Quad-Band 850/900/800/1900 MHz
- Time to First Fix for Cold Start: < 29 sec
- Reacquisition Time: < 1 sec
- Support A-GPS

Battery Life
- Battery Life: 24 Hours of operation

Environmental Conditions
- Operating Temperature: Up to +70°C (Except Battery)
On-board Unit for Outdoor Tracking Services using Removable Tracker with built-in battery (2)

Installation and Operation Procedure

**Operation Procedure Sticker:**

**Security Hologram Sticker with warning message:**

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**Installation and Operation Procedure**

**Step 1:** Fully charge this unit by the genuine AC charger (about 8 hours charging from fully exhausted battery level). It can be last for 24 hours after fully charged. (Red “charging” & Green “fully charged”)

**Step 2:** Fix this unit with Velcro tape at a safe position (not blocking the driver’s view) inside the vehicle cabin with the TOP side facing upward (antenna position).

**Step 3:** Turn ON this unit with light indication about 15 minutes in outdoor area before entering the Airport Restricted Area. (FAST intermittent-flashing orange/ blue “network searching” & SLOW intermittent-flashing orange/ blue “network attached”).

**Step 4:** Turn OFF this unit after leaving the Airport Restricted Area and the light indication OFF.

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**Warning:** This GPS Device is the property of DigiMobi Technology Limited and is loaned to an eligible user on subscription basis. If the housing or main unit of this GPS device is damaged owing to any tampering, misuse or accident, the user is liable to compensate DigiMobi Technology Limited for the amount of HK$1,500 on any replacement.

警告：此装置乃圆方科技有限公司的財產，並租用予合資格用戶。若此裝置外殼或主機因遭強行打開、濫用，或意外而造成任何損壞，用戶須賠償港幣$1,500予圓方科技有限公司作替換費用。
On-board Unit for Outdoor Tracking Services using Removable Tracker without battery
(Model# Repackaged AT105)

<table>
<thead>
<tr>
<th>Product Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Repackaged model of AT105 GPS Tracker</td>
</tr>
<tr>
<td>● Built-in GSM and GPS Antenna; No Battery</td>
</tr>
<tr>
<td>● Get power from Vehicle through Cigarette Lighter Adapter</td>
</tr>
<tr>
<td>● Velcro Tape on the bottom to ensure installation safety</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrics Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSM</td>
</tr>
<tr>
<td>Quad-Band 850/900/800/1900 MHz</td>
</tr>
<tr>
<td>Time to First Fix for Cold Start: &lt; 29 Sec</td>
</tr>
<tr>
<td>Reacquisition Time: &lt; 1 sec</td>
</tr>
<tr>
<td>Support A-GPS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Battery Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Life: 24 Hours of operation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature: -20°C to +70°C</td>
</tr>
<tr>
<td>Relative Humidity: 5% to 95%, non-condensing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Installation Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connect Cigarette Lighter Adapter with Removable Tracker</td>
</tr>
<tr>
<td>Safely install removable tracker on vehicle with the help of velcro tape</td>
</tr>
<tr>
<td>Push the on/off button to switch on the Removable Tracker</td>
</tr>
<tr>
<td>Push the on/off button again to switch off the Removable Tracker</td>
</tr>
</tbody>
</table>

Removable Tracker connected with Cigarette Lighter Adapter
On-board Unit for Add-On Functionalities
To be installed into Vehicle/GSE by DigiMobi’s Technicians

On-Board Unit to be installed:

Technical Specifications of GPS Tracker Model# AT106

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<tr>
<th>Mechanics Data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Approx. 132 x 90 x 39 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 360 grams</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrics Data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GSM (Dual SIM Slot)</td>
<td>Quad-Band 850/900/800/1900 MHz</td>
</tr>
<tr>
<td>GPS Receiver</td>
<td>Time to First Fix for Cold Start: &lt; 29 Sec</td>
</tr>
<tr>
<td></td>
<td>Reacquisition Time: &lt; 1 sec</td>
</tr>
<tr>
<td></td>
<td>Support A-GPS</td>
</tr>
<tr>
<td>Odometer</td>
<td>DC to 20KHz (5Vpeak to 24Vpeak)</td>
</tr>
<tr>
<td>Input/Output Ports</td>
<td>5 Input Ports &amp; 4 Output Ports</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>External Power Input</td>
<td>DC 9-30V</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Average 250mA</td>
</tr>
</tbody>
</table>

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</tr>
</thead>
<tbody>
<tr>
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<td>-20°C to +70°C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>5% to 95 %, non-condensing</td>
</tr>
</tbody>
</table>

Note: Add-on Functionalities could not be installed on some vehicle types as it may trigger unexpected warning signals.
Add-On Functionality (a)
Driver Management

Its recommended that Add-on Functionality Driver Management, Speed Alerting and Odometer can be installed at the same time.

Important Notes:
1) Add-on Functionalities are optional services. Payment terms and installation shall be directly arranged between DigiMobi Technology Ltd and airport organization concerned.
2) Add-on Functionalities may cause damage or trigger unexpected warning signals for some vehicle types. Vehicle owners must get the confirmation from DigiMobi Technology Limited for the viability of installation for their vehicle types.
Add-On Functionality (b)
Speed Alerting

Important Notes:
1) Add-on Functionalities are optional services. Payment terms and installation shall be directly arranged between DigiMobi Technology Ltd and airport organization concerned.
2) Add-on Functionalities may cause damage or trigger unexpected warning signals for some vehicle types. Vehicle owners must get the confirmation from DigiMobi Technology Limited for the viability of installation for their vehicle types.
Add-On Functionality (c)  

Odometer

- Using Odometer Signal to calculate speed & mileage is more accurate than GPS signal. 95% accuracy on speed and mileage calculation is guaranteed after calibration.
- As it works independently from GPS signal, speed monitoring can still be very accurate inside airport tunnels.

Important Notes:
1) Add-on Functionalities are optional services. Payment terms and installation shall be directly arranged between DigiMobi Technology Ltd and airport organization concerned.
2) Add-on Functionalities may cause damage or trigger unexpected warning signals for some vehicle types. Vehicle owners must get the confirmation from DigiMobi Technology Limited for the viability of installation for their vehicle types.
Add-On Functionality (d)  
Fuel Level Sensor

Important Notes:
1) Add-on Functionalities are optional services. Payment terms and installation shall be directly arranged between DigiMobi Technology Ltd and airport organization concerned.
2) Add-on Functionalities may cause damage or trigger unexpected warning signals for some vehicle types. Vehicle owners must get the confirmation from DigiMobi Technology Limited for the viability of installation for their vehicle types.
Installation Process
and
Installation Application Procedure
Installation Step 1-2-3

1. Vehicle owner to fill in “Vehicle Installation Form” with pre-set date and time slot
   • Email the completed form to the email address aagps@digimobi.net

2. DigiMobi representative to contact Vehicle Owner within 1 week of time to confirm “Vehicle Installation Schedule”
   • In case there is no response from DigiMobi, vehicle owner can call 24-hour customer hotline at (852) 2370 0776

3. Vehicle Owner to drive the vehicle to the carpark next to IAC/Gate 1 at the scheduled installation time
   • For “Basic Functionalities”, it will take approximate one hour to complete installation
   • After installation, Vehicle Owner will be required to sign on a Job Completion Form for record
**Application Form & 6 Pre-set Time Slot per day**

**Pre-set Time Slot**  |  **Starting/Completion Time**
---|---
1 | 09:30-10:30
2 | 10:30-11:30
3 | 11:30-12:30
4 | 14:00-15:00
5 | 15:00-16:00
6 | 16:00-17:00

**Please be reminded to arrive on-time and collect the vehicle after completion**
Designated Work-site for Installation, Repairing & Dismantling of On-Board Unit

Installation Location: Carpark next to Integrated Airport Centre (IAC) i.e. Near Gate 1 & Regal Airport Hotel
Installation Procedure
Vehicle Installation Guide
(AT105 GPS Tracker)

- Vehicle’s dashboard to be opened up by professional technician
- Connect main power cable to vehicle’s radio, fuse box or dashboard power
  - Do not connect power from OBD to avoid alarm indicator on
- Connect vehicle ACC signal
  - Use 5A fuse in connecting power and ignition
- Connection of GPS antenna:
  - Place the GPS antenna on vehicle chasis where GPS signal reception is good.
  - Avoid looping antenna end to avoid interference
- Connection of GPM antenna
  - Bundle GSM antenna with vehicle cable
  - Avoid placing GSM antenna on metal surface
Standard Testing after installation

- Check Main Power and ACC Signal Cable Connection
  - Check whether GPS Tracker power is on
  - Ignite vehicle engine and check whether ACC signal is captured by server

- GPS Signal Test
  - Check GPS signal strength
  - Check whether the reported location is correct
  - Use spectrum analyser or mobile app to check whether there is GPS interference

- GSM Signal Test
  - Check GSM signal strength
  - Check whether internet connection can be established
Payment Method & Pricing Information
Basic Functionalities Payment Method

Source of Information: Airport Authority Hong Kong
Add-On Functionalities
Payment Method

Source of Information: Airport Authority Hong Kong
### Pricing for Basic Functionalities and Add-on Functionalities

<table>
<thead>
<tr>
<th>Service</th>
<th>Vehicle</th>
<th>Monthly (HK$) (For 5 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Subscription (Cost recovery principle)</td>
<td>Motorized Vehicle/GSE with AVL not requiring entry to Baggage Basement</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Motorized Vehicle/GSE with AVL requiring entry to Baggage Basement</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Motorized Vehicle/GSE under escort to the airside</td>
<td>42</td>
</tr>
<tr>
<td>Add-ons (Pre-agreed rate)</td>
<td>Driver Management</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Alerting Device</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Odometer Integration</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Vehicle Fuel Level Measurement</td>
<td>15</td>
</tr>
</tbody>
</table>

Source of Information: Airport Authority Hong Kong
Other additional charges shall apply for the following cases:

- Any damage or total loss to the On-Board GPS Equipment due to accident or damage or mis-use or abuse or stolen
- Dismantling within the first year of contract
- Inspection fee due to mis-use or abuse
- Administration fee related to Data Import from 3rd party server
- Retrieval of Archived Data beyond 90 days

Please refer to the T&C shown in AA Extranet for details
For further enquiries, please contact:

Email: aagps@digimobi.net
or
24-Hour Service Hotline (852) 2370 0776