



iTriangle

Infotech Pvt Ltd

innovate • optimise • deliver

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GPS-GSM-Based Vehicle Tracking

&

Monitoring System, Model S101



Executive Summary

- ❖ **A Bangalore, India, based Company.**
- ❖ Commenced operations in February 2009.
- ❖ Engaged in Design and Development in the domains of GPS,GIS, Mobile Applications, RFID, Web Based Enterprise Applications.
- ❖ Manufacturing and Quality Assurance.
- ❖ A Full Fledged R & D wing with a dedicated team of qualified professionals.



OUR VISION

To be a vibrant company, providing quality and efficient service to customers and a rewarding experience to its employees.

OUR MISSION

We will develop products and provide services that will have a Strong Social Impact and would improve the quality of Human Life. From a business perspective, our products/services will help our clients get a better control over their business and make a positive impact to their bottom-line. .

INNOVATION

Through our innovative ideas, we always thrive to develop our next revolutionary product. We believe, nothing can inspire us like innovation. “Just as energy is the basis of life and ideas the source of innovation, so is innovation the vital spark of all human change, improvement and progress”.

Our innovative products and solutions have always played a major role in solving our clients’ specific problems. Our solutions are simple, cost effective, and developed by observing the end user needs. Our knowledge of multiplatform technologies, simple and proved methods and eagerness to develop the next big thing, has made us one of the competent companies capable of delivering state of the art cutting edge technology products.

“We are inspired to innovate”

A dark silhouette of a city skyline with various buildings of different heights is positioned at the bottom of the slide, spanning the entire width.

Market Information

- ❖ The Transportation and the Logistics industry play a critical role in shaping and improving a Country's economy. Efficient Operations will lead to higher productivity and higher revenues.
- ❖ GPS-GSM-RFID based solutions will help Companies to effectively track and monitor the movement and the status of their fleet on a real time basis and there by reduce mal practices, wastage, and thus improve productivity and security.
- ❖ The ability to provide Safety, Security and Productivity has made the GPS-GSM-RFID based products and services an integral part of the managing process of the Fleet in any organisation which intends to derive maximum benefit from their assets.
- ❖ We are moving to a situation where it is going to be mandatory for all the Vehicles that are being used for a commercial purpose should have a GPS based tracking device fitted into them.

Company / Product Certification

ISO 9001:2008
Certified Company

ARAI[®]
Progress through Research
As per AIS004, Part 3:2009



aQuila Track OEM Offerings



S 101



Highlights

- ❖ Small Form factor.
- ❖ Parameters – location, time, speed, distance, ignition status, 1 analog readings(fuel), 2 Digital I/O.
- ❖ Easy installation and configuration.
- ❖ Suitable for hidden/stealth installation with both GPS and GSM internal antennas
- ❖ Voice Communication.
- ❖ Low power consumption and power optimization to save vehicle battery.
- ❖ Long battery backup- up to 8hrs of tracking with inbuilt 1500 mAH Lion Battery
- ❖ Can be charged through USB ports.
- ❖ Mains battery removal alert.
- ❖ Easy software integration with SDK.
- ❖ All parameter configuration through SMS and USB.
- ❖ Remote health checking /diagnostic through SMS.
- ❖ Configurable Tracking interval, 10Sec,30Sec, 1Min (other options may be provided based on request)
- ❖ Parameter Configuration through USB (hyper Terminal) or SMS.
- ❖ Inbuilt load balancing algorithm.
- ❖ Low communication data usage.
- ❖ DNS support available –enables domain name configuration instead of IP address.
- ❖ Dual IP support (special firmware required).
- ❖ Data Storage and forward architecture with storage capacity of 1MB (approx 3000 tracking records).
- ❖ Customization support available.

Device Specification

Parameters	Description
Processor	ARM CORTEX /M3
Memory	5000 Tracking Records on Solid State Flash, 100K Erase and Program Cycle, 10 year data retention.
GSM Module	Quad Band GSM 850/900/1800/1900Mhz, DCS GPRS: class10 Coding Scheme CS1 to CS4.
GPS Module	GPS:66 acquisition-/ 22 tracking channels, Ultra high tracking/navigation sensitivity: -165dBm1,Inbuilt patch antenna, 5 Meters Accuracy.
Antennas	Internal Antenna
Communication Interface	TCP/IP on GPRS.
Record Storage/buffer	5000 Tracking Records.
Ports	1-USB Device type, 1 Analog I/O(fuel) and 2 Digital I/O, 1 Ignition Input
Configuration	Recording delay, transmission delay.
Communication Scheme	Connect ->transfer->disconnect.
Speed Sensor	GPS(default)

Parameters	Description
SIM Interface	Supports SIM card: 1.8V & 3V
SMS	Supports Text
Parameters	See Description
GPRS Packet Data	Class 10 ; Class 8 (Optional), Coding Scheme CS1 to CS4
LED Indication	Processing, GSM, GPS, USB Detection
Connectors	6 Pin power mate connector
Power Supply	Wide DC input voltage range (9V - 32V),
Current Consumption	300mA during tracking and 150mA during standby
Internal Battery	1500mAh, 5 to 8 Hr backup.
Enclosure	Rugged IP 67 rated ABS Plastic Casing
Temperature	Operating: -10°C to +55°C Storage: -10°C to +85°C (Without Battery)
Dimension (mm x mm x mm)	98L x 73.1 W x 25 H in mm
Weight	125 grams

System Architecture



S101 Advantage.....

Features may vary depending on the model and the variant

Small Form Factor

- ❖ Small form factor of 115 L x 80 W x 25 H in mm
- ❖ Enables easy installation
- ❖ Can be installed even in two wheelers
- ❖ Completely concealed installation to protect from tampering.

High Accuracy GPS

- ❖ Location accuracy of 2.5 M @ 50% CEP.
- ❖ Can track even in GPS shadow areas (under bridges, indoor environment near windows etc)
- ❖ Best in class time to position fix : cold start duration of 39 Sec.
- ❖ Dead reckoning support

Power Optimization

- ❖ Power optimization based on ignition status.
- ❖ The tracking interval is automatically increased if the vehicle ignition is found to be OFF for more than 10 minutes. Reduces the load on the Vehicle battery and Server when the vehicle is in parked state.
- ❖ Sleep mode and Deep sleep mode available for battery optimization on small battery systems such as mopeds and bikes.

Internal Antenna

- ❖ GPS high gain internal antenna with -165dBi gain enables accurate tracking even with internal antenna and device hidden inside the dash board
- ❖ Internal high gain GSM antenna
- ❖ Completely hidden inside the dashboard.

Internal Battery

- ❖ 1500 mAh, Lion battery.
- ❖ 6 to 8 hour tracking on battery when fully charged.
- ❖ Parameter Configuration through USB interface.
- ❖ Rugged Cylindrical battery with high MTBF.
- ❖ Over Charging and Deep discharge protection.
- ❖ Smart battery management enables long battery life.

Storage and forward

- ❖ The tracking information is first stored on the internal flash storage and then forwarded to server.
- ❖ 5000 records space available on board.
- ❖ Recorded data can be extracted offline through USB(special firmware required) if required.
- ❖ Ensures zero data loss during GSM no coverage and communication failure, server downtime etc.

Parameter Configuration

- ❖ All parameters can be configured through USB or through SMS remotely.
- ❖ IP address, Port number, domain name, tracking interval , admin phone number, alert phone number.
- ❖ In built validation logic for type checking and correctness of configuration parameters ensures wrong parameters are rejected during configuration.
- ❖ Pre configuration option available on request during manufacturing. Parameter specified by customers(such as IP, Port, Tracking interval Etc) can be pre configured during manufacturing using bulk configuration process, so that effort configuration in the field can be avoided.

Server Connectivity

- ❖ Connect, transfer and disconnect type of communication, reduces the resources on the server per connection.
- ❖ Connection interval can be separately configurable apart from tracking interval to balance the load on server.
- ❖ Dual IP support (if required by customer, firmware upgrade required) for high availability.
- ❖ Storage and forward architecture of data communication ensures that no data is lost during server failure, communication failure, or data congestion.
- ❖ DNS support for seamless IP portability. Device can be configured with a domain name instead of an IP of the server for easy porting of devices from one server to another.

Communication and Data usage

- ❖ Binary communication protocol ensures high packaging of data per session to reduce the size of data usage.
- ❖ Option for Text based protocol available on request, if required by system integrators/customers. (firmware upgrade needed).
- ❖ Works on TCP communication.
- ❖ Encrypted communication support (on request, firmware upgrade required) for high secure communication requirements.



Integration & Customization support

- ❖ To enable faster integration with client system, we provide a SDK with a multithreaded client server and protocol parser.
- ❖ SDK is available for both windows and Linux server.
- ❖ Provides a socket to HTTP bridge for quick integration.
- ❖ Protocol documentation provided for low level integration if required by the system integrator/customer.
- ❖ Customization support could be provided for large scale requirements.

aQuila TRACK with Vehicle Theft Protection System

❖ aQuila Track S101



❖ Immobilization Relay



❖ Sound Alarm



❖ Geo Lock



WARRANTY

- ❖ iTriangle will provide One Year Limited Warranty, the scope of which is as follows:
- ❖ Accessories like Internal Battery and Wiring Kit and other related accessories will carry a Six Months' replacement warranty.
- ❖ All Components and spares will either be serviced or replaced, during the warranty period.
- ❖ Onfield support will not be provided. The devices have to be sent to our Bangalore Office for services and repairs.
- ❖ All types of physical damage, damage due to extreme working conditions (Vehicle Battery Voltage range above 32 volts, Temperature above 70 degrees C and below – 20 degrees C) , water logging will not be covered under warranty service terms.
- ❖ iTriangle shall provide training to the Client's authorized personnel to handle L1 and L2 service.
- ❖ Any type of physical damage, sabotage or damage due to water log etc. (induced defects) shall not be considered under warranty, and customer shall bear the cost of the device and servicing.
- ❖ AMC options for L3 service are available.



Our Major Clients for System Integration and OEM

OEM/System Integrators

- ❖ Escorts Ltd. Faridabad
- ❖ MIBS, Bangalore.
- ❖ Ethic Soft, Bangalore
- ❖ B Tree Technologies, Chennai
- ❖ Bayonet, Kenya.
- ❖ Argus Technologies LLP, UAE.
- ❖ Asset Telematics, Hyderabad
- ❖ Colosseum Tech Solutions Pvt Ltd, Hyderabad
- ❖ Rolta India Ltd., Mumbai.
- ❖ Tata Consultancy Services Ltd
- ❖ Himu Softech, Bangalore
- ❖ Kanoe Software Pvt. Ltd

THANK YOU
AND WE LOOK FORWARD
TO SERVE YOU

