# GPS4NET

# G4N35GPS

Ultra Miniaturized and
Compact GPS Tracker

## KEY FEATURES

- Dual-SIM mode GSM operation
- +16400 Geofencing areas
- 2000 Personnel ID tags
- Integrated high-quality antenna
- 3D acceleration sensor
- Integrated Bluetooth 3.0+EDR

- GPS jamming detection
- Compressed TCP/IP data
- Advanced command system
- Easy software integration
- External interfacing over K-line
- GSM-GPRS Traffic accounting

## Easy Installation & Maintenance:

- Diagnose & setup over cable K-Line and wireless over Bluetooth or GPRS
- 2 bi-colored LED status for GSM, GPS
- Small size & Integrated high-gain GPS, GSM, Bluetooth antennas

## Flexible configuration of complex features (examples):

- Advanced acquisition engine providing over 25 record types
- Flexible I/O configuration (State & Event counters and generators)
- Event data logger, including mileage counters, work time counter
- Advanced personnel identification (2000 IButton tags & 6 activity groups)
- Immobilization controlled by the acceleration sensor and external relay
- Geofencing and event management for over 16400 polygons
- External peripheral interfacing over K-Line, UART, Bluetooth (OBD , PDA)
- Over 35 types of hardware alarms triggered by the system and peripherals
- Encrypted XTEA data transfer over GPRS, Bluetooth and UART
- Dual-SIM management with fail-over and traffic balance algorithms
- 128 predefined GSM networks list to provide an automatic APN setup
- Work & Private mode triggered from multiple sources including IButton tags
- Advanced Power management with multiple wake-up triggers
- Real Time Clock and Sync management for Unix Epoch Time reporting

## System & events reported information (examples):

- Navigation info, trip distance, engine working hours
- System status, input power, battery voltage, up-time, GSM status
- Specific information reported for driver behavior analysis
- I/O status, configuration, event counters and event generators
- Private mode record includes counters for distance, trip, accumulated total time
- Personnel ID record for start & stop work time, total distance, group
- Down-time record for tracking and counting power-down events
- Traffic accounting for Dual-SIM counting GPRS sessions and data transferred
- Alarm record for storing alerts and critical events generated by filters

## Available options:

- Advanced Active-RFID engine for tracking containers and assets
- Wireless remote control for securing and monitoring vehicles
- Water proof enclosure with integrated battery for asset tracking projects
- Embedded SIM including prepay GSM global communication services
- External high-gain active antennas for GPS, GSM

## Technical Parameters:

- Optimized RTOS for telematics
- GSM-GPRS Quad-band SIM800H
- SkyTraq or UBlox A-GPS receivers
- +57K records memory storing
- 2 configurable pull-down I/O
- 1 Input Analogical / Digital
- Internal GPS & GSM Antennas
- Bluetooth 3.0+EDR data & audio
- 3D accelometer sensor
- 3-level watchdog
- Firmware upgrade over GPRS
- Humidity & corrosion protection
- Small size 50x35x15 mm
- Automotive grade components
- Temperature range -30~+85C

## Communication Interfaces:

- IButton (1-Wire) Interface
- K-Line Interface
- UART Interface
- Bluetooth SPP serial bus profile

## Power Supply:

- 6 – 36 VDc input range
- 0.22 mA @ 24V in deep sleep mode

## External Options:

- CAN/FMS/OBD vehicle interface
- Bluetooth Hands Free Car Systems
- PDA - WinCE/Android
- PNA GARMIN interface
- Li-SOCL2 power backup battery
- Fuel flow & level metering sensors
- Tachometer Interface
- A-RFID tags for ID and Temperature
- External I/O expander

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## PLATFORM3 Concepts:

The versatility of the platform is concentrated in a preemptive Real Time Operating System (RTOS) specially developed and optimized for telematics, in use since 2009. This proprietary RTOS has proved to be reliable and today is integrated within every product manufactured by GPS4NET.

PLATFORM3 is managing parallel subsystems handling the hardware management such as I/O Management or Bootloader, and as well the logical higher level entities such as Ignition control, Panic button, Motion detection, Transmission Engine.

For maximum reliability of the RTOS the Time Management Engine time-stamps the events in Epoch Time Format and monitors the discontinued functionality of the device reporting the power-down interval in seconds.

The Record Storage Engine is controlling the insertion of up to 8 simultaneous records / second, adding a sequence counter to each records type. The storage of the records is persistent even after the data is transferred on the server side. With help from the Time Management Engine responsible with the creation of the Down-Time Record, the server is able to reconstruct the map of the flash memory and to track down each RTOS event and device working history.

PLATFORM3 is the industry leading over-the-air device management & maintenance system, offering out-of-the-box, hands-free configuration and automatic post-installation upgrades, thus providing the ability to remotely monitor unit health status across customer's fleets to quickly identify issues before they become expensive problems.

## AVL platform integration:

Integration of the new hardware in existing AVL software platforms is always raising time-to-market and financial problems. For this reasons GPS4NET have created G4NReceiver, a middleware enterprise server application handling the TCP/IP communication with GPS units and SQL Database connection management.

G4NReceiver is UNIX compatible and designed to manage thousands of parallel TCP connections. The communication with the DataBase is managed internally with XML descriptive files where complex queries are configurable in a few minutes.

To complete the job, G4NReceiver is providing a full set of functions for real-time alarm processing, SMS processing, OTA auto-diagnose and a Web API for interfacing RDT or other 3-rd party applications. The combination between RDT and G4NReceiver is a state-of-the-art solution providing in the same time: GPRS communication management, wireless diagnose and offline setup of devices.

## Special Features :

■ G4N35GPS device is allowing a cost effective communication management by integrating an embedded SIM provided by global GSM operators.

Beside the cost effectiveness, the Dual-SIM role provides a backup communication channel for mission critical applications where the coverage of a singular GSM operator is not sufficient.

The switching management of the two SIM(s) is offering the possibility to choose a specific network for a certain SIM, traffic balancing conditions, separate data server and connection priorities.

■ Following the market demands for a flexible and yet powerful authentication and personnel time-tracking solution, GPS4NET have implemented an engine based on iButton (Dallas) ID key technology, capable of handling over 2000 ID tags.

The Personnel Authentication Engine is designed to manage 6 groups of tags with assigned actions for acquisition, transmission, alarm triggering, ignition control, or event generators. By providing such features, the engine is suitable for various business application from rent-a-car, personnel time tracking to vehicle utility control and maintenance.

■ The current market trend has increase the demand for technical solutions for Insurance Telematics, eCall and Anti-Theft applications. These applications have together similar technical demands such as an integrated 3D acceleration sensor, immobilizer relay, emergency calling in alarming conditions.

■ The Alarm Engine provides over 35 real time event based alarms. Each alarm source is independently configured and dependent of the GSM Network status, thus providing a flexible monitoring of the sub-systems events or peripheral's status.

■ The Geofencing engine supports the highest number of Point-of-Interest on the market, being capable to handle over 16400 rectangular areas.

The engine provides an advanced grouping feature thus allowing the classification of multiple POI by Input/Output state, the possibility to define short length corridors or to set an alarm perimeter.

■ Non-engine based ignition is detect based on multiple triggers such as the voltage and the movement, thus allowing a 2-wire installation. An ideal solution for older vehicles and machinery with no engine information and covert installation for asset tracking & recovery.