G4N45GPS

Highly featured & affordable
Advanced GPS Tracker

KEY FEATURES

- Dual-SIM stand-by GSM
- +16400 Geofencing areas
- 2000 Employee ID tags
- Integrated high-quality antenna
- 3D acceleration sensor
- Integrated Bluetooth 3.0, 4.1
- Ultra low-power in deep sleep
- GPS jamming detection
- Engine Regime over CAN-bus
- 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, RS232 and wireless over Bluetooth or GSM
- 3 bi-colored LED status for GSM, GPS and RS232 or another input source
- Integrated high-gain GPS, GSM, Bluetooth. External antennas are optional

Flexible configuration of complex features (examples):

- Advanced acquisition engine providing over 30 record types
- Flexible I/O configuration (State & Event counters and generators)
- CAN-bus and RS485 programmable profiles for collecting vehicle information
- Event data logger, including mileage counters, work time counter
- Dual Ibutton interfaces for multiple personnel authentication scenarios
- Advanced employee time-tracking (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 RS232 / RS485, CAN-bus, K-Line, Bluetooth
- Over 35 types of hardware alarms triggered by the system and peripherals
- Sound patterns for the external buzzer triggered by alarms and authentication
- 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 4 level Power management with multiple wake-up triggers

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
- Employee ID record for clock-in/out, work time, private time, total distance
- Genfencing information related to the work-time & mileage spent in areas
- Down-time record for tracking and counting power-down events
- Alarm record for storing alerts and critical events generated by filters
- Tachograph real-time information record - vehicle & driver (VDO & Stoneridge)
- Engine regime & engine error codes sniffed by customized CAN-bus profiles

*** This product is available in multiple versions of hardware configuration and software features. Please contact us for details about the stock and OEM versions.*

Technical Parameters:

- Automotive grade components
- 2 embedded MCU - System, IO
- GSM 2G or 4G Narrow Band
- GNSS receivers MTK or Skytraq
- Internal GPS & GSM Antennas
- Bluetooth 3.0+EDR, 4.1 data & audio
- 3D accelerometer sensor
- 4-level power-management
- Optimized RTOS for telematics
- Firmware upgrade OTA
- +57K records memory storing
- Small size 80x40x15 mm
- Temperature range -40~+85C
- 3 Analog Input – 12 bit resolution
- 3 Digital Input
- 4 Digital pull-down Output

Communication Interfaces:

- Dual IButton (1-Wire) Interface
- K-Line for Tachograph and sensors
- RS232 or RS485 (J1708)
- CAN-bus 2.0B J1939 compatible
- Bluetooth SPP serial bus profile

Power Supply:

- 5 – 36 or 5- 60 VDc input range
- 30 uA @ 12V in deep sleep (level 4)
- 1 pin for 4.2 V-OUT

External Options:

- Remote Tachograph download
- Li-SOCL2 power backup battery
- Fuel flow & level metering sensors
- Temperature & Humidity sensors
- OBDII vehicle interface over Bluetooth
- PNA GARMIN interface
- Bluetooth Hands Free Car Systems
- Remote control for securing vehicles

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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 :

- G4N45GPS device is offering a cost effective communication by integrating an embedded SIM provided by global GSM operators. The Dual-SIM role provides a backup communication channel for mission critical applications where the coverage of a singular GSM operator is not sufficient.

- CANbus engine provides ready made decoding profiles for J1939 & FMS networks implemented by most of the vehicle producers. This profiles are programmable over GPRS, being designed to offer a balance between the relevance of the information and the resources used (memory usage, GPRS traffic costs, server load).

The CAN acquisition engine have a built-in diagnostic and analyzer module which indicates visually (1 LED) or OTA the presence of certain CAN messages, helping the customization of profiles and easy installation.

- The embedded Personnel Authentication Engine is designed to manage 2000 iButton (Dallas) ID tags shared by 6 task groups 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 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 covert installation for asset tracking & recovery

- The Real Time Clock is providing deep sleep & wake-up management and fast time-fix when GPS signal is missing or restarted at maximum 2 weeks after a power outage.

At less than 20 seconds time drift / week, the device is capable to mark very precisely each data record when the GPS time-fix is missing, thus providing a bullet-proof event recording solution in critical situations.