

G4N01EXP



GPS4NET

I/O Device Expander - Features Expander



Key Features:

- GPS Tracker I/O Expander
- Integrated Ignition control
- Dual iButton reader
- Complex time-tracking system

Easy Installation & Maintenance:

- 1 bi-colored LED for power-up and communication status with GPS tracker
- Full compatibility with new and old models of GPS trackers
- Direct replacement in case of failure without the necessity to reconfigure
- Predefined pin-out for features such as Panic Button, Ignition Control
- Wireless diagnostic & setup over ISM & GPRS with maintenance software

Flexible to configure (examples):

- Advanced personnel identification (2000 tags / 6 groups)
- Expandable I/O configuration by assigning GPS features to I/O expander
- Work & Private mode triggered from multiple sources including iButton
- Integrated immobilization performed by an integrated latching relay
- Configure the audio tone signals of internal or external buzzers
- Configure the behavior of LEDs integrated into the iButton reader
- Combined control of iButton authentication, Relay state and Buzzer

Specific system / events reported information (examples):

- Report the I/O status of Panic Button, Ignition, Relay, Work/Private Button
- Private mode record includes counters for distance, trip, accumulate time
- Personnel ID record: ID, work time, trip time & distance, and reader used

Project specific options:

- Internal relay with associated controlled states for immobilization
- Advanced personnel authentication with iButton tags with two readers
- External Buzzer for authentication alerts in case of unauthorized access
- External LEDs for authentication signaling and work/private mode control
- Over-voltage integrated protection for in-line connected devices

Technical Parameters:

- Small size 50x35x20 mm
- Automotive grade components
- Silicon Labs system MCU
- 1-Wire interfacing protocol
- 1 Input for Panic Button
- 1 Input for Ignition control
- 1 Input for Private-Mode switch
- 1 generic Analog Input
- 2 iButton Readers support
- 1 Latching 2Amp Relay
- Integrated Internal Buzzer
- 1 pin for external Buzzer
- Temperature range -30~+85C
- Humidity & corrosion protection
- +8...+35 VDC input range
- Over-voltage protection < 40V
- Transitory voltage protection
- 16 Pin MicroFit connector

Application:

- Fleet Management
- Personnel Management
- Personnel Time-Tracking
- Rent-a-car Maintenance
- Anti-Theft Applications

Technical considerations:

1-Wire is a device communications bus system designed by Dallas Semiconductor Corp. that provides low-speed data, signaling, and power over a single signal. 1-Wire well known for the use of iButton tags (Dallas Key), is similar in concept to I²C, but with lower data rates and longer range. It is typically used to communicate with small inexpensive devices such as digital thermometers.

A network of 1-Wire devices with an associated master device is called a MicroLan. In any MicroLan, there is one master entity in charge which in our case is the GPS Tracker device that shares an I/O for a 1-Wire bus. The master initiates activity on the bus, simplifying the avoidance of collisions on the bus. In order to extend the standard to allow a special addressing procedure, the 1-Wire protocol has been modified in a proprietary format.

Easy maintenance & configuration:

Devices compliant with the Platform2 RTOS are supporting the proprietary 1-Wire protocol and includes the specific command stack and parameters required to configure the G4N01EXP. Thus the peripheral will transfer the configuration in own memory and will react independently of master device. This concept allows the direct replacement of the device in case of hardware failure, while the new device will transfer the configuration after the first boot-up.

In case of power-failure of the master device or communication malfunction of 1-Wire bus, the G4N01EXP will continue to work and maintain the same state. The disconnect status is registered by the master device and reported to the command center over GSM as an alarm state.

The maintenance and setup of the G4N01EXP is provided by the RDT (Remote Diagnostic Tool), a PC software which facilitate the configuration from a friendly GUI. RDT is able to assist a connected G4N01EXP to a master device (GPS Tracker) over ISM or GPRS.

Economical considerations:

Our products and technologies offer innovative solutions for industrial uses of embedded telematic technology while striving to make high-tech standards economically viable. Although we offer full functionality, the customer has the ability to utilize only those functions that are necessary for his application.

Special Features :

- Following the market demands for a flexible and yet powerful authentication and personnel 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 provide 6 groups of tags supporting 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 integrated latching (bi-stable) relay combined with the integrated buzzed and the Personnel Authentication Engine are offering one of the best solutions for vehicle engine ignition control, vehicle maintenance, personnel time-tracking and nevertheless the anti-theft security. The device is designed to provide properly these features without using a backup battery.

- In order to respond to the European regulations G4N01EXP is supporting externally a Private-Mode switch that allows the driver to switch anytime from Work-Mode in Private-Mode and to reset all internal work counters as well as to deny the geolocation data acquisition. This feature can be combined with the relay state control, LED warning color and buzzer signaling.

