VEHICLE
TRACKING SYSTEMS

iON ULC

Navigation User Terminal

The iON ULC Navigation User Terminal is a high-tech versatile device designed for installation in a vehicle or speciality machinery to monitor vehicle or fuel use, to track the object location, condition of sensors and devices connected to the terminal. iON ULC is to take the niche of low-cost tracking terminals and is focused on a wide spectrum of customers ranging from private individuals to large-scale corporate vehicle fleets with passenger cars, trucks and specialty machinery.

iON ULC Basic Functions:

- Real-time positioning of a target object, determining its speed and moving direction
- Data collection from various connected sensors
- Data transmission to the server on schedule (for any specified interval)
- Data storage in the nonvolatile memory

iON ULC Key Features:

- Built-in battery
- Compact-size housing
- Power-saving mode
- Built-in accelerometer
- Extended voltage range
- Ease of installation and use
- Intuitive and user-friendly interface
- "Black box" holding up to 2000 records

Operating Principle

The terminal receives data on its position, current time, speed and driving direction from the GPS and GLONASS satellites.

Data received from the satellites and readings of the connected sensors are transmitted to the dedicated server over the GSM network (in the GPRS mode). Data is transmitted over the Internet. The intuitive web interface allows the user to track vehicle location and operating conditions via a PC, laptop, mobile phone or tablet computer from anywhere in the world.

Reliability, Efficiency and Smooth Operation in Any Conditions

Any business is focused on obtaining the greatest results. To achieve this goal you need to solve two main problems:

- Efficient workflow planning and management
- Reduction of possible losses

iON ULC is designed to tackle these tasks.

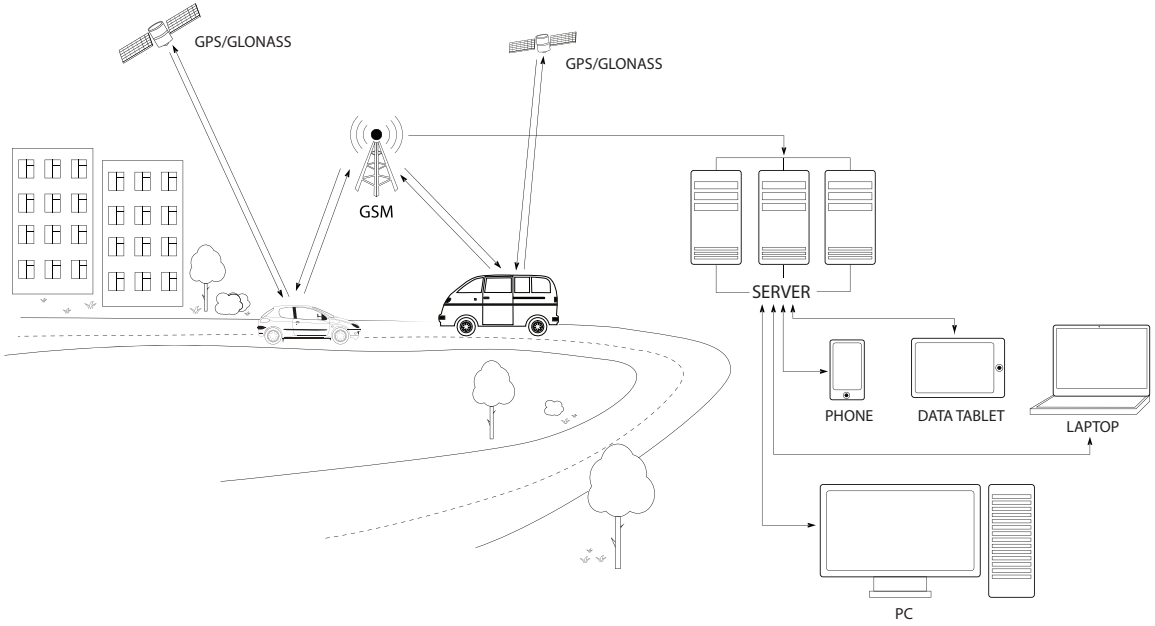
Tracking of vehicle routes and travel time provides high performance and detection of unauthorized use and downtimes. Monitoring of fuel consumption reduces possible frauds of dishonest employees to minimum.

Moreover, when developing the device, we devoted special attention to its quality and reliability. The team of the iON ULC developers aimed at creating cost-effective, fail-safe and efficient equipment which offers a wide set of features.

Reduction of Business Costs and Workflow Optimization Using iON ULC

A fuel level sensor can be connected to the iON ULC terminal. Data received from the sensor prevents unauthorized fuel draining and enable you to monitor the amount of fuel filling and its consumption.

Mileage data calculated by the dispatcher application, real-time tracking of vehicle movements for any time range help to eliminate vehicle misuse, illicit routes and unauthorized downtimes.



Operation in Roaming

The device can operate in a roaming area ensuring flexible operation and stable connection in various conditions.

Surge Protection

The onboard power system in the trucks of Russian origin is characterized by voltage surges when switching on or off inductive loads (starter, electric drives, fan, air conditioning equipment).

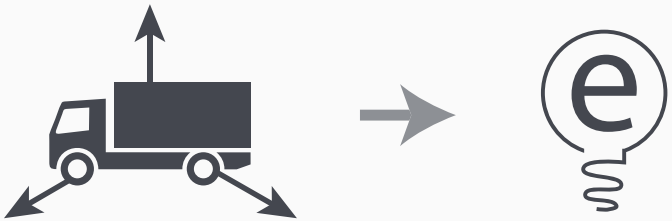
The power circuit, used in the terminal, has been subjected to a comprehensive testing and is successfully applied in cars and trucks.

The iON ULC is equipped with:

- a protective diode against voltage surges
- protection against high-voltage noises
- protection against reverse voltage supply

Built-in Accelerometer

iON ULC is equipped with the built-in accelerometer detecting vehicle movements. This enables the terminal to automatically switch to a power-saving mode.



Connectivity

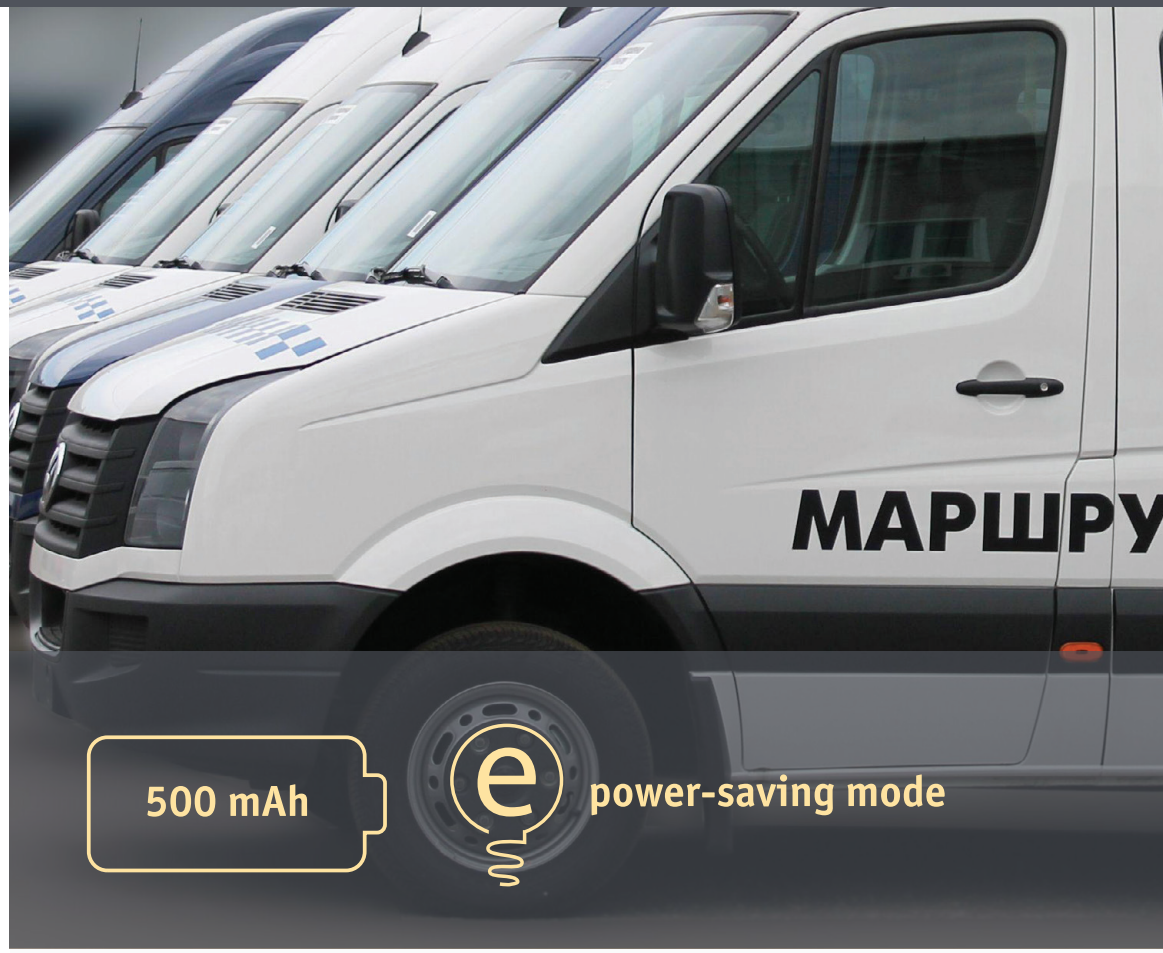
iON ULC supports the following interfaces:

- Analog input 0...32V
- Discrete input ("low level" - 0...2V, "high level" - from 3V and over)
- Discrete output ("open collector")

Built-in Battery and Power-Saving Mode

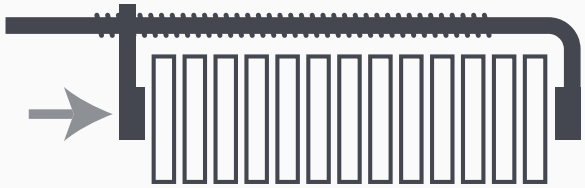
iON ULC is equipped with a built-in 500 mAh capacity battery. The battery provides the terminal smooth operation up to 5 hours in online mode if no external power is supplied.

The onboard equipment consumes the battery energy of a vehicle even if the engine is shut off. Therefore, after a long stop there might be some problems with the engine start. The iON ULC terminal is fitted with a customizable power-saving mode to solve this problem. When a vehicle comes to a stop and the engine is shut off, the terminal switches to the power-saving mode preserving battery charge. In this case GPS/GLONASS and GSM are disabled, and the device waits for ignition to be switched on. Switch to the power-saving mode is registered by the server and displayed in the dispatcher program. When the ignition is switched on, the terminal "wakes up" and starts its normal operation. The power-saving mode provides significant GPRS traffic economy.



Data Compression before Sending to a Server

Data is compressed prior to sending it to the server enabling significant traffic economy.



Benefits of Applying iON ULC in a Workflow

- Detecting cases of unauthorized fuel draining
- Detecting cases of unauthorized vehicle use, downtimes and idling
- Reduced costs for vehicle maintenance and fuel
- Counting the total number of attachment operating cycles, motometer and fuel waste
- Monitoring sensors connected to the terminal
- Improved passenger, employee and freight safety
- Boosting company's profit
- Workflow optimization
- Reduced costs