

**Vehicle “Off-Line”
GPS and Fuel Monitoring System
(post trip vehicle monitoring system)**

About “Off-Line” monitoring

- ✓ **“Off-Line” vehicle and fuel monitoring system** is the most inexpensive and the most cost effective solution for vehicle and special machinery monitoring;
- ✓ **“Off-Line” GPS* monitoring system** does not have any visible or hidden operating payments.
- ✓ **“Off-Line” GPS and fuel monitoring system** provides fuel-monitoring function (determinates fuel consumption and facts of fuelling and fuel drains).

* – “Off-Line” GPS monitoring system is based on satellite system of geographical coordinates definition (GPS System).

About Fuel Monitoring



In general Fuel Monitoring System consist of three main components:

- fuel level sensor (special analog or digital fuel level sensor);
- data logger (GuardMagic mTF series) for storing data from fuel level sensors;
- Personal Computer and software with "fuel monitoring" function. Storing loaded fuel information, analyzing information and generation series of reports and diagrams.

GuardMagic fuel monitoring and analyzing system in a full automatically mode, "day & night" collects and stores detailed information about fuel tank contents and fuel usage.

System Allows

GuardMagic “Off-Line” vehicle and fuel monitoring system allows:

- company owners, directors, transport managers always have a real information of vehicles, vehicles fleet and its utilization;
- increase vehicle or special machinery effectiveness;
- minimize non-productive expenses;
- supervise vehicle trip and parameters of movement;
- supervise fuel usage;
- prevent (or minimize) fuel theft;
- supervise vehicle operation time;
- prevent not authorized use of transport;
- supervise drivers working hours and/or operators working hours effectiveness.

Target Groups



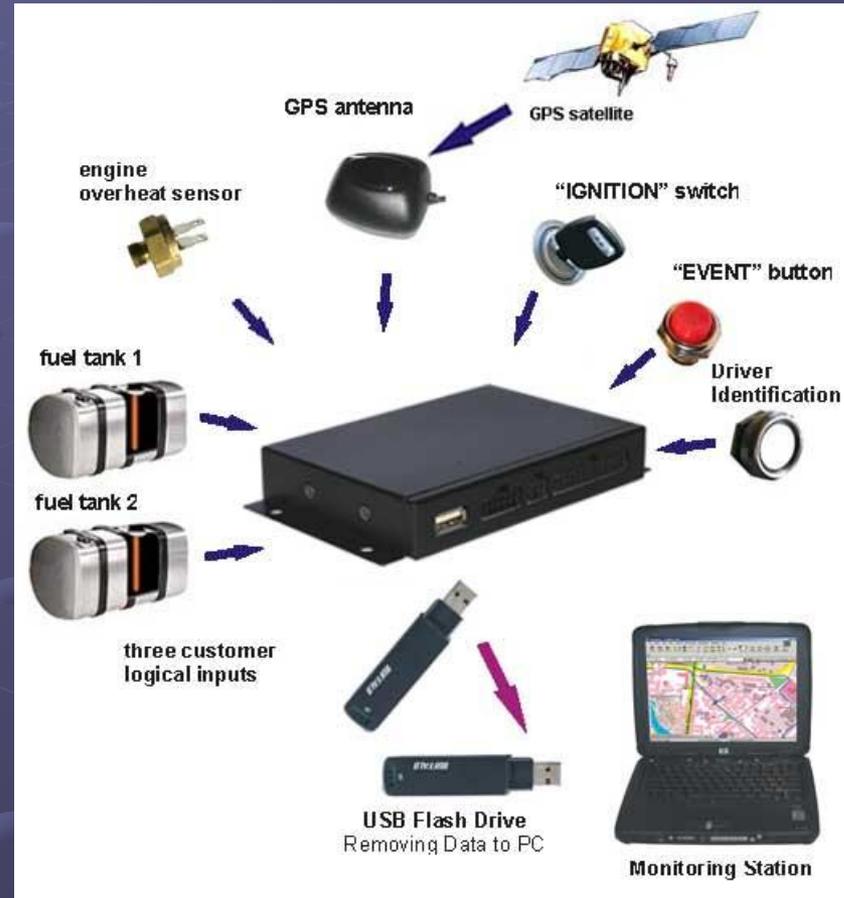
- ✓ Commercial, cargo vehicle, refrigerator trucks (transportation companies);
- ✓ Passengers transports;
- ✓ Building, construction and road industries
- ✓ Mining industry;
- ✓ Agricultural;
- ✓ Municipal;
- ✓ Towboats
- ✓ Railroad

GuardMagic System Advantages

- ✓ Monitoring after vehicle is driven;
- ✓ Has not any operation fees;
- ✓ Not needed any wireless communication network;
- ✓ Monitor: fuel, vehicle, driver;
- ✓ Multi tank supports;
- ✓ Data removing to PC by standard USB Flash Drive;
- ✓ Download data in any convenient place;
- ✓ Intelligent data logging;
- ✓ Easy installation and easy operation;
- ✓ High functionality and wide range of application.

System Structure in General

- ✓ **Space Fragment:**
GPS satellite sends the special signals that received by GuardMagic mTF module. Based on this signal module calculate vehicle location.
- ✓ **Vehicle Module:**
GuardMagic mTF module store in internal memory information about vehicle trip with parameters of movement, data from fuel level sensors (fuel history) and information from other additional sensors.
Later this information removed to PC by standard USB flash drive.
- ✓ **Monitoring Station:**
PC based computer with monitoring software. Store in data base removed information and generate necessary reports and diagrams about vehicle activity and fuel utilization.



GuardMagic System Advantages in General

- ✓ monitoring after vehicle is driven;
- ✓ has not any operation fees (visible or hidden);
- ✓ not needed any wireless communication network;
- ✓ monitoring: vehicles, fuel, drivers;
- ✓ multi tanks monitoring;
- ✓ intelligent logging (transportation, special machinery);
- ✓ download data to standard USB Flash Drive;
- ✓ download data in any convenient place;
- ✓ not needed to remove module from vehicle;
- ✓ not needed parking vehicle while data loading to PC;
- ✓ can support from 50 and up to 1000 vehicles;
- ✓ can support from 50 and up to 1000 drivers;
- ✓ different types mTF modules in one system;
- ✓ comfortable system building and system growing.

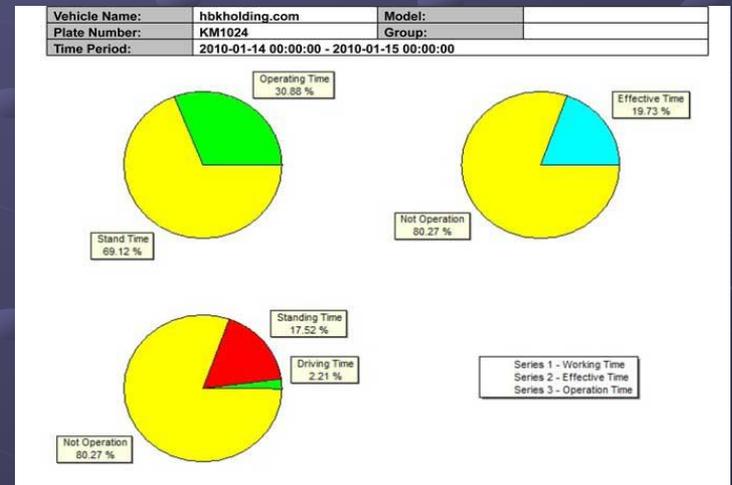
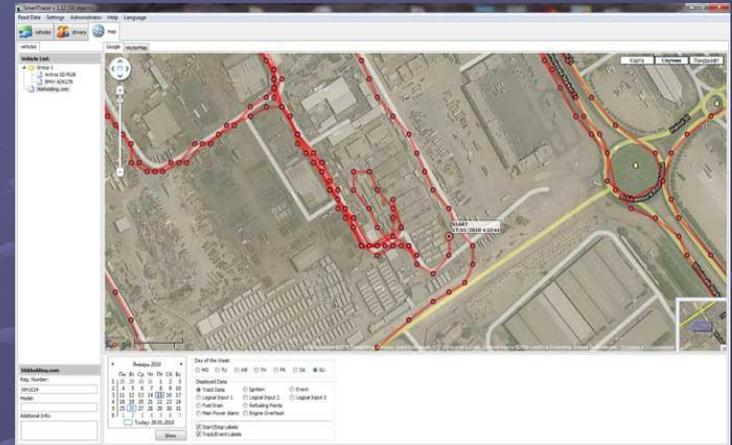
mTF Modules Advantages in General

- ✓ installation on any type of transport (truck, lorry, car, combine, tractor etc.);
- ✓ not needed remove module from vehicle or vehicle parking while data moving to PC;
- ✓ easy download data to USB flash drive in any convenient place;
- ✓ protection against data losing;
- ✓ multi tank fuel monitoring (fuel history);
- ✓ "fuel resolution" 1024 levels;
- ✓ supports fuel sensors with analog or digital interface;
- ✓ GPS monitoring (location, speed);
- ✓ connection to additional sensors and circuits;
- ✓ driver identification function;
- ✓ vehicle protection function;
- ✓ easy fuel tank calibration procedure;
- ✓ temperature monitoring (depend of module type);
- ✓ 240 000 records;



Software Advantages in General

- ✓ support from 50 and up to 1000 vehicles;
- ✓ support from 50 and up to 1000 drivers;
- ✓ user friendly interface;
- ✓ display vehicle trip on electronic maps with details of moving;
- ✓ display on electronic maps points of refueling and points of fuel draining;
- ✓ display on electronic maps points of events;
- ✓ generation reports about vehicle activity (in general and in details);
- ✓ generation reports about fuel consumption;
- ✓ generation reports about fueling and fuel draining;
- ✓ generation reports about driver activity;
- ✓ generation reports about events and non-standard situation;
- ✓ diagrams generation;
- ✓ possibility functionality growing;



GuardMagic mTF Series Key Features

- ✓ series of advanced "GPS & Fuel" Data Logger with additional inputs and USB output interface;
- ✓ GPS monitoring;
- ✓ fuel monitoring (fuel history);
- ✓ multi tanks supports;
- ✓ driver identification function;
- ✓ vehicle immobilization function;
- ✓ storing data up to 240 000 points;
- ✓ data removing to PC by standard USB flash drive;
- ✓ two main operation mode;
- ✓ easy fuel tank calibration;
- ✓ flexible user setting.



GuardMagic mTF Connection in General



GuardMagic mTF module is established on a vehicle (can be done hidden installation) and in full automatic mode collect and store in the internal memory information about vehicle trip, movement parameters, fuel history, temperature history, data from additional sensors and electrical circuits.

About GuardMagic mTF1

- ✓ GuardMagic mTF1 is an universal "GPS & Fuel Data Logger" with additional inputs, driver identification function and USB output interface;
- ✓ GuardMagic mTF1 is intended for vehicles and special machinery (road, building, construction, maintenance, earth moving, agricultural machines etc.) monitoring;
- ✓ GuardMagic mTF1 supports up to TWO fuel tank (TWO fuel level sensor with analog output: GuardMagic FLPa or vehicle regular fuel level sensor);
- ✓ In additional GuardMagic mTF1 has an immobilization function.
- ✓ Data moving from GuardMagic mTF1 to Personal Computer is carried out by standard "USB Flash Drive“;
- ✓ GuardMagic mTF1 allows to create non expensive universal vehicle "GPS and fuel monitoring" system.

GuardMagic mTF1 Functionality

During the operation GuardMagic mTF1 module in full automatic mode collect and store in internal memory:

- ✓ GPS information (vehicle trip);
- ✓ vehicle movement parameters (speed, time);
- ✓ fuel history in up to TWO tanks;
- ✓ active driver information (driver ID code);
- ✓ engine status (On / Off);
- ✓ information about engine overheat;
- ✓ status of customer logical sensors (up to THREE logical sensors);
- ✓ "Event" button pressing.



About GuardMagic mTF2

- ✓ GuardMagic mTF2 is an universal "GPS & Fuel Data Logger" with additional inputs, driver identification function and USB output interface;
- ✓ GuardMagic mTF2 is intended for vehicles and special machinery (road, building, construction, maintenance, earth moving, agricultural machines etc.) monitoring;
- ✓ GuardMagic mTF2 supports up to TWO vehicle regular fuel tanks (TWO fuel level sensor with analog output (GuardMagic FLPa or vehicle regular fuel level sensor);
- ✓ In additional GuardMagic mTF2 has an immobilization function.
- ✓ Data moving from GuardMagic mTF2 to Personal Computer is carried out by standard "USB Flash Drive“;
- ✓ In additional GuardMagic mTF2 allow to store data about engine RPM, engine overheat and data from vehicle odometer circuit;
- ✓ GuardMagic mTF2 allows to create non expensive universal vehicle "GPS and fuel monitoring" system.

GuardMagic mTF2 Functionality

During the operation GuardMagic mTF2 module in full automatic mode collect and store in internal memory:

- ✓ GPS information (vehicle trip);
- ✓ vehicle movement parameters (speed, time);
- ✓ fuel history in up to TWO tanks;
- ✓ active driver information (driver ID code);
- ✓ engine status (On / Off);
- ✓ information about engine overheat;
- ✓ status of customer logical sensors (up to THREE logical sensors);
- ✓ engine RPM;
- ✓ vehicle odometer data;
- ✓ "Event" button pressing.



About GuardMagic mTF3

- ✓ GuardMagic mTF3 is an universal "GPS & Fuel Data Logger" with additional inputs, driver identification function and USB output interface;
- ✓ GuardMagic mTF3 is intended for vehicles and special machinery (road, building, construction, maintenance, earth moving, agricultural machines etc.) monitoring;
- ✓ GuardMagic mTF3 supports up to SIX vehicle fuel tanks: THREE regular and THREE service (SIX fuel level sensor with EIA-485 communication interface: GuardMagic DFSL series or the same);
- ✓ GuardMagic mTF3 supports up to SEVEN digital temperature sensors (1-wire communication interface);
- ✓ In additional GuardMagic mTF3 has an immobilization function.
- ✓ Data moving from GuardMagic mTF3 to Personal Computer is carried out by standard "USB Flash Drive";
- ✓ In additional GuardMagic mTF3 allow to store data about engine RPM, engine overheat and data from vehicle odometer circuit.
- ✓ GuardMagic mTF3 allows to create advanced vehicle "GPS and fuel monitoring" system.

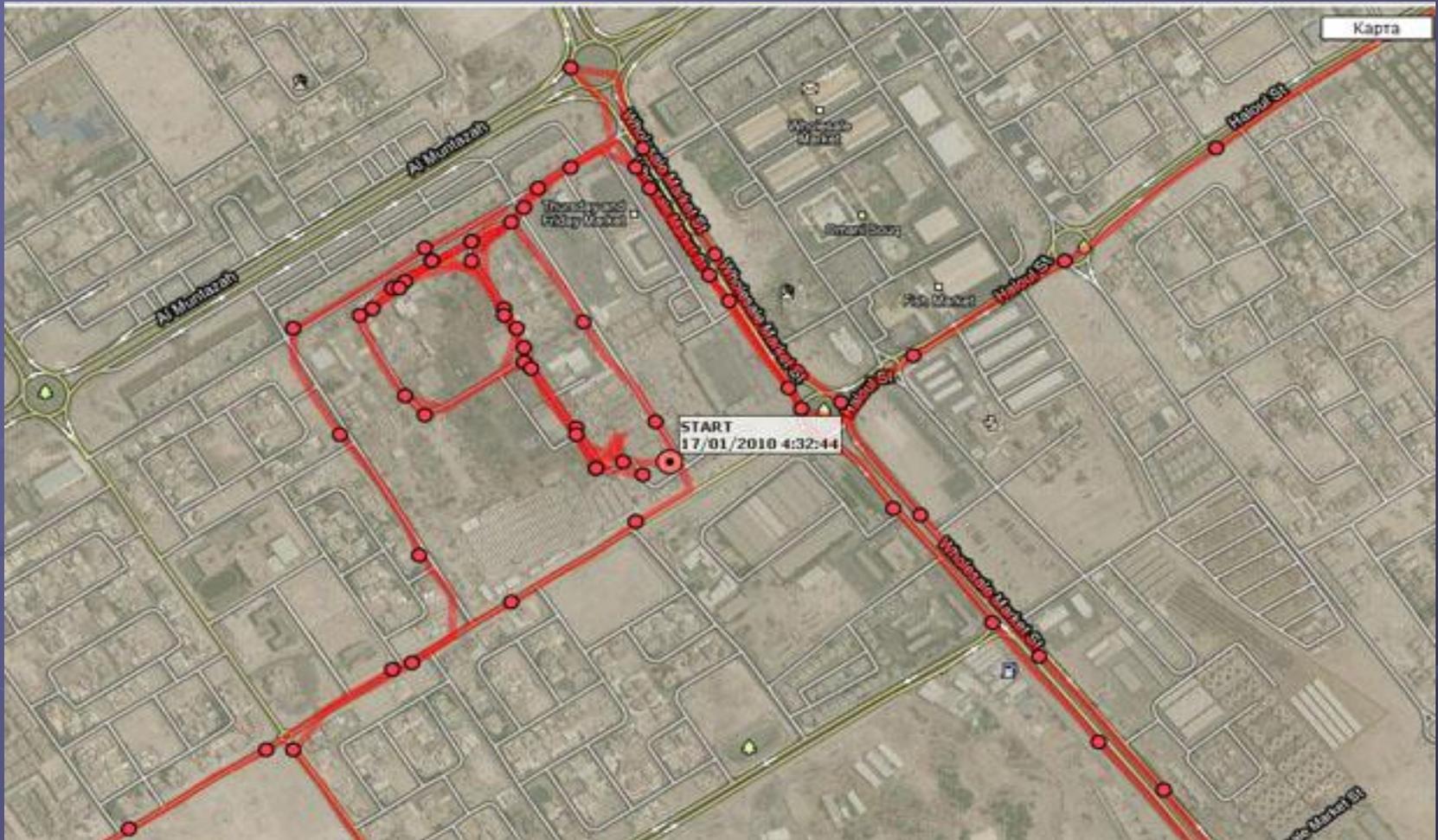
GuardMagic mTF3 Functionality

During the operation GuardMagic mTF3 module in full automatic mode collect and store in internal memory:

- ✓ GPS information (vehicle trip);
- ✓ vehicle movement parameters (speed, time);
- ✓ fuel history in up to SIX tanks;
- ✓ temperature from up to SEVEN digital temperature sensors;
- ✓ active driver information (driver ID code);
- ✓ engine status (On / Off);
- ✓ information about engine overheat;
- ✓ status of customer logical sensors (up to THREE logical sensors);
- ✓ engine RPM;
- ✓ vehicle odometer data;
- ✓ "Event" button pressing.

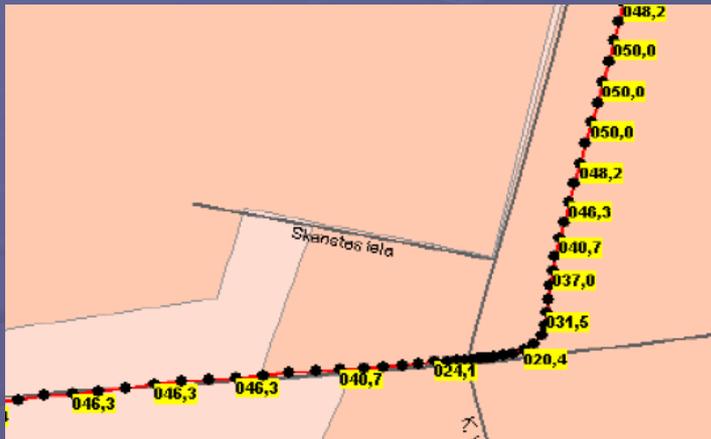


Visualisation Trip On Electronics Maps

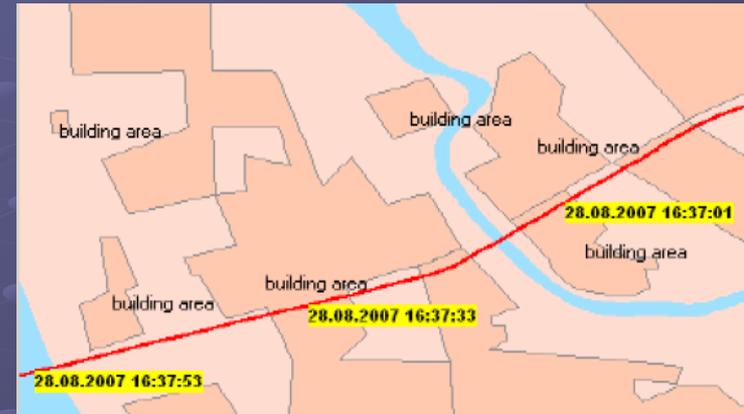


“Stamps” Visualisation On Electronics Maps

Parameters of movement



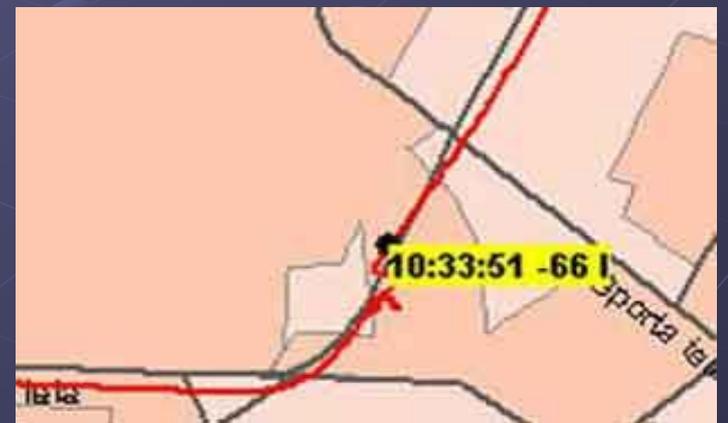
Date and time



Fueling

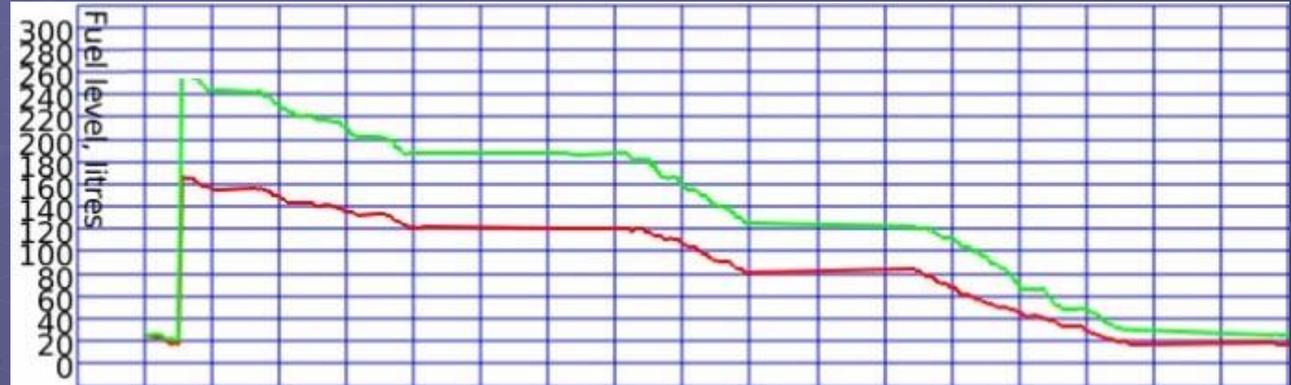


Fuel draining

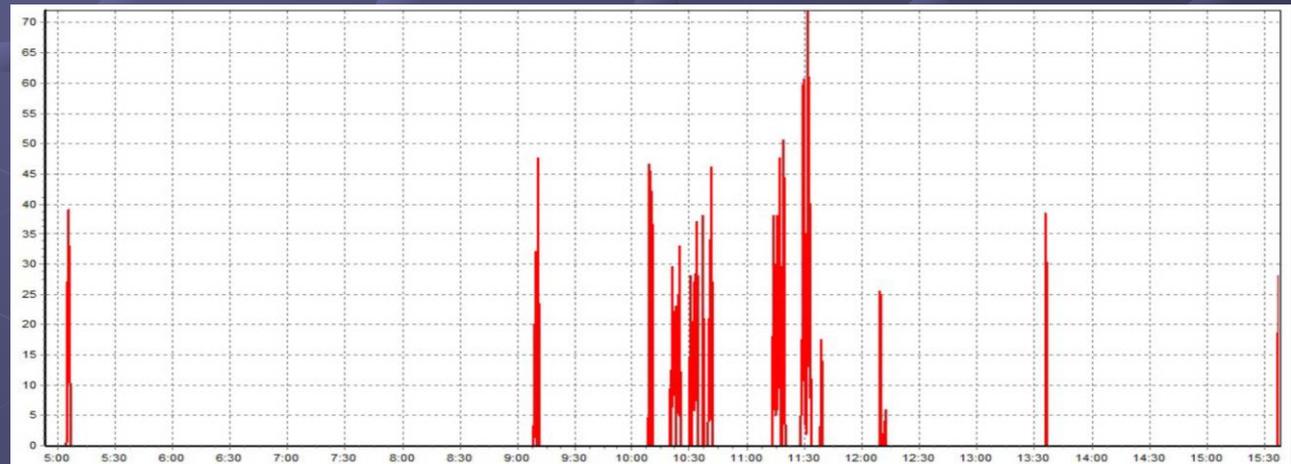


Graphs

Fuel Graph

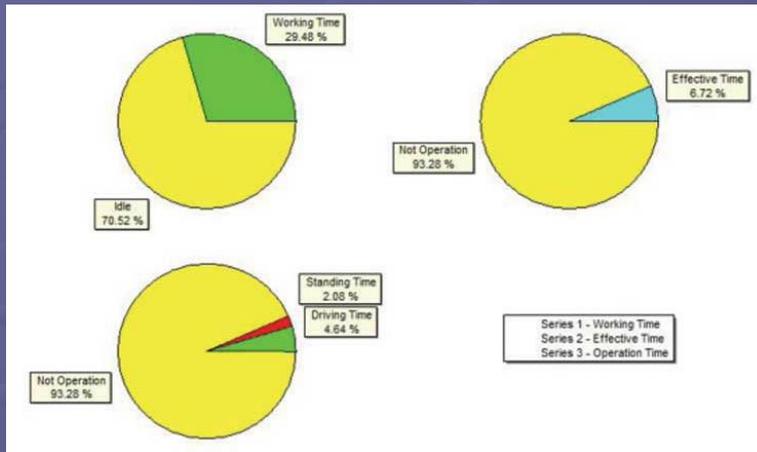


Speed graph

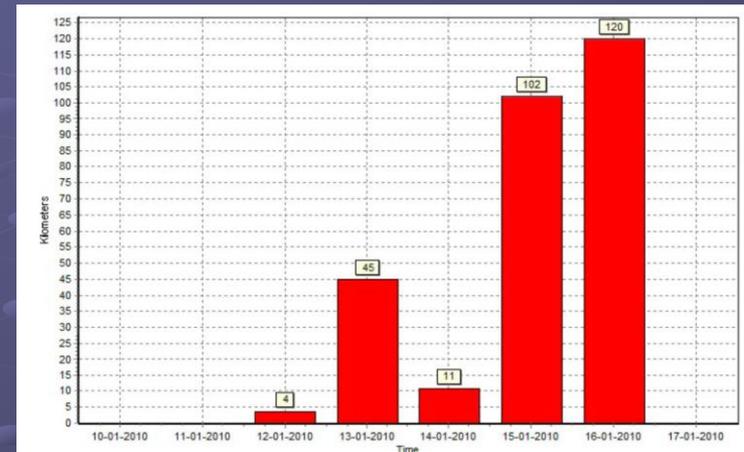


Graphs

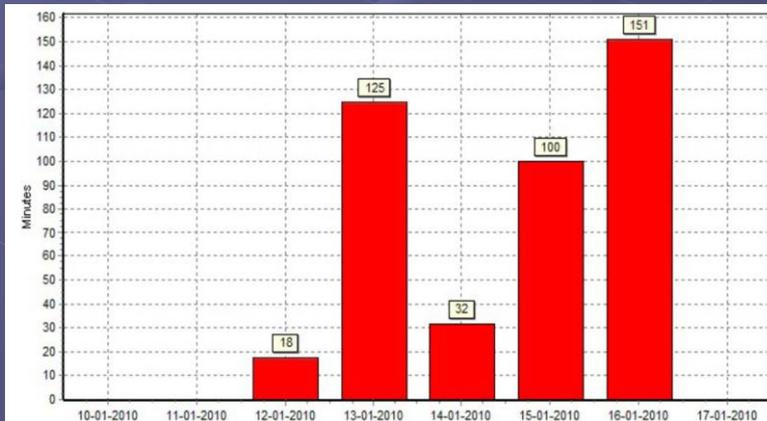
General activity (Quick View)



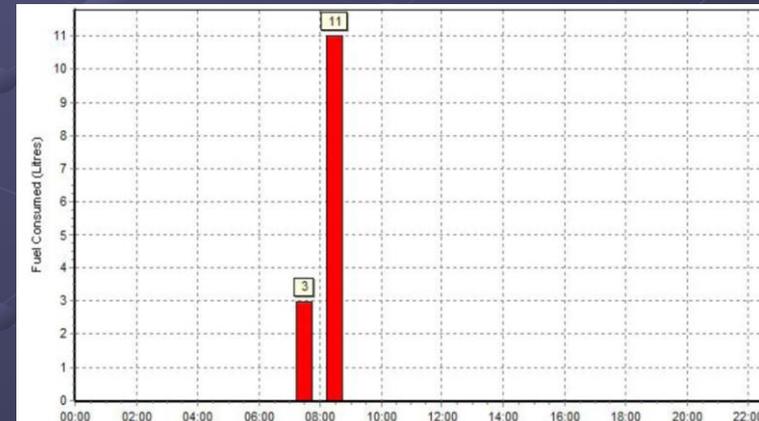
Daily Driving



Daily Activity



Daily Fuel Consumption



Reports

General

Vehicle Name:	hbkholding.com	Model:	
Plate Number:	KM1024	Group:	
Time Period:	2010-01-11 00:00:00 - 2010-01-18 00:00:00		

OPERATION

Operating Period (Calendar Days): 7
Operating Days (Working Days): 5

DISTANCE

Trip Distance: 348.939 km

TIME

Summary Working Time (hh:mm:ss): 128:31:36
Summary Effective Time (hh:mm:ss): 19:12:35
Summary Driving Time (hh:mm:ss): 9:19:54
Summary Idle Time (hh:mm:ss): 7:48:53
Summary Stand Time (hh:mm:ss): 9:52:41

PRODUCTIVITY

Using the Working Time: 77 percents
Effectiveness per period: 11 percents

EVENTS

Event Button Pressed (qty): 0
L1 activation (qty): 0
L2 activation (qty): 0
L3 activation (qty): 0

NOT REGULAR SITUATION

Engine Overheat (qty): 0
Attempt To Start With Wrong Authorization (qty): 88
Attempt To Start Without Authorization (qty): 0

Utilization

Operating Period (Calendar Days): 31
Operating Days per Period: 21
Distance: 599.308 km
Summary Working Time (hh:mm:ss): 80:00:57
Summary Effective Time (hh:mm:ss): 32:12:11

Date	Using of Working Time	Effectiveness	Operating Time	Effective Time	Driving Time	Idle Time	Parking Qty
12/01/2010	10.93%	2.17%	2:37:25	0:31:12	0:18:37	0:08:01	1
13/01/2010	49.83%	15.77%	11:57:34	3:47:03	2:04:33	2:38:07	9
14/01/2010	44.68%	19.73%	10:43:23	4:44:05	0:31:47	2:45:05	7
15/01/2010	15.55%	9.47%	3:43:52	2:16:25	1:39:46	0:40:07	1
16/01/2010	49.34%	16.64%	11:50:29	3:59:40	2:31:43	1:15:52	6
17/01/2010	54.23%	16.26%	13:0:54	3:54:10	2:13:28	0:21:41	3
18/01/2010	48.63%	25.13%	11:40:16	6:01:54	4:14:13	0:36:52	3
19/01/2010	48.78%	20.18%	11:42:24	4:50:38	3:24:59	13:52:13	5
20/01/2010	11.43%	8.82%	2:44:40	2:07:04	1:08:36	0:09:39	1

Consolidated

Operating Period (Calendar Days): 31
Operating Days per Period: 21
Distance: 599.308 km
Summary Working Time (hh:mm:ss): 80:00:57
Summary Effective Time (hh:mm:ss): 32:12:11

Date	Work Starting	Work Finishing	Work Time	Distance (km)	Effective Time	Driving Time	Stand Time
12/01/2010	12/01/2010 9:02:07	12/01/2010 11:39:32	2:37:25	4.067	0:31:12	0:18:37	0:12:35
13/01/2010	13/01/2010 5:37:56	13/01/2010 17:35:30	11:57:34	44.940	3:47:03	2:04:33	1:42:30
14/01/2010	14/01/2010 4:53:58	14/01/2010 15:37:21	10:43:23	10.530	4:44:05	0:31:47	4:12:18
15/01/2010	15/01/2010 5:47:30	15/01/2010 9:31:22	3:43:52	101.100	2:16:25	1:39:46	0:36:39
16/01/2010	16/01/2010 4:59:37	16/01/2010 16:50:06	11:50:29	120.000	3:59:40	2:31:43	1:27:57
17/01/2010	17/01/2010 4:32:50	17/01/2010 17:33:44	13:0:54	68.300	3:54:10	2:13:28	1:40:42
18/01/2010	18/01/2010 4:26:43	18/01/2010 16:06:59	11:40:16	92.710	6:01:54	4:14:13	1:47:41
19/01/2010	19/01/2010 4:50:45	19/01/2010 16:33:09	11:42:24	118.300	4:50:38	3:24:59	1:25:39
20/01/2010	20/01/2010 5:15:19	20/01/2010 7:59:59	2:44:40	39.370	2:07:04	1:08:36	0:58:28

Fuel Consumption

OPERATION

Operating Period (Calendar Days): 1
Operating Days (Working Days): 1

DISTANCE

Trip Distance: 0.447 km

FUEL TANK 1

Initial volume: 0.0 litres
Final volume: 0.0 litres
Minimal volume: 0.0 litres
Maximum volume: 0.0 litres
Fueling volume: 0.0 litres
Fuel drain: -25.0 litres

FUEL TANK 2

Initial volume: 0.0 litres
Final volume: 10.0 litres
Minimal volume: 0.0 litres
Maximum volume: 10.0 litres
Fueling volume: 20.0 litres
Fuel drain: 0.0 litres

FUEL TANK 3

Initial volume: 0.0 litres
Final volume: 0.0 litres
Minimal volume: 0.0 litres
Maximum volume: 0.0 litres
Fueling volume: 0.0 litres
Fuel drain: 0.0 litres

TOTAL FUEL

Initial volume: 0.0 litres
Final volume: 10.0 litres
Fueling volume: 20.0 litres
Summary fuel spent: -25.0 litres
Fuel drain: -25.0 litres
Fuel consumption: 0.0 litres;
Average consumption per 100 km: 0.0 litres;
Average consumption per 1 hour: 0.0 litres;

GuardMagic Contacts

"GuardMagic" SIA

Riga, Latvia



www.guardmagic.com

www.guardmagic.lv

avl@guardmagic.lv ,

avl1@guardmagic.lv ,

info1@guardmagic.com ,

support@guardmagic.com (technical support)

phone: + 371 2914 2887

phone: + 371 2915 4768