

TK TechnoKom



PROFESSIONAL FLEET MANAGEMENT
EQUIPMENTS & SOFTWARE

2015



ABOUT

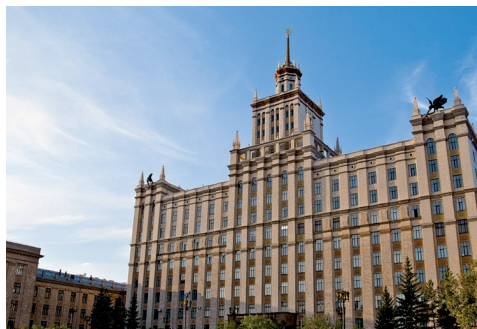
Corporate group TechnoKom specializes in radio systems engineering and integration and has more than 20 years of experience in this field. The team of highly skilled developers, including engineers and programmers, was created in 1993 in Chelyabinsk and was originally based at the Radio Technical Systems Department of the South Ural State University.

Eventually a small production company developed into a concern of companies united by a common purpose which formed the corporate group TechnoKom.

Over the years company's specialists accumulated extensive practical knowledge in design and production of various electronic devices and systems. TechnoKom-Technology, a member of the corporate group TechnoKom, has one

of the most technologically advanced production facilities for serial assembly of electronic boards in Russia. In 2009 the company successfully launched its own fully automated full-cycle SMD production line.

Today the entire process from designing to final product is carried out in Chelyabinsk on the basis of the cutting edge European and Japanese equipment. The high quality of electronic assembly is confirmed by both domestic and foreign experts.

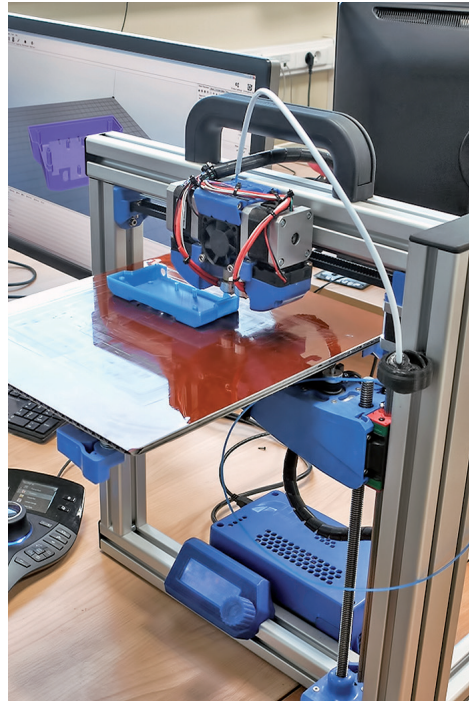


DEVELOPMENT

Product development starts with the needs analysis of our customers and dealers. The research team continually monitors the market, researches for new technologies and components, sets the standards for new products and ensures compliance with the current legislation. Constant technical support of the world leading manufacturers and suppliers of components ensures state of the art engineering solutions. All this gives us an edge and helps to make sure that we are one step ahead of our competitors.

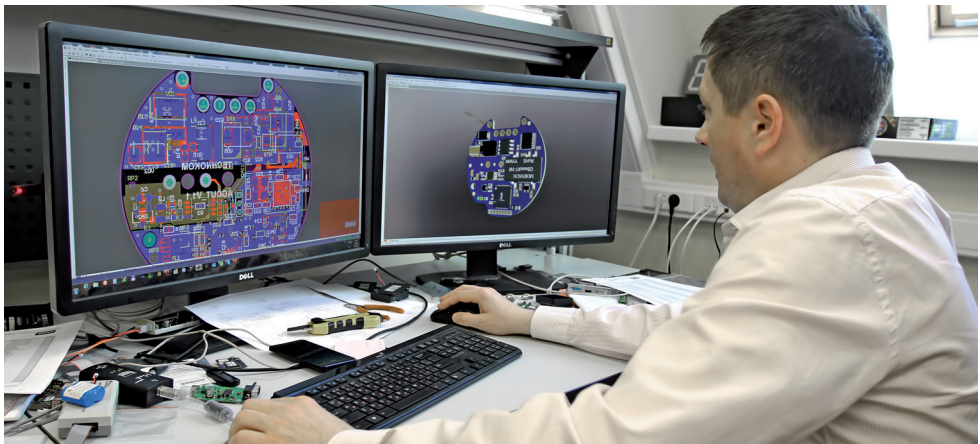
The next stage of development is conducted by the design-engineering department. This team deals with the immediate development of products and the circuit design. A team of professional design engineers implements the requirements of the research phase, extends products' functionality, introduces new technologies and components into the system and cuts off dead-end solutions. Development is conducted on the basis of the latest hardware and software. The team uses a wide range of measuring and testing equipment from the leading manufacturers.

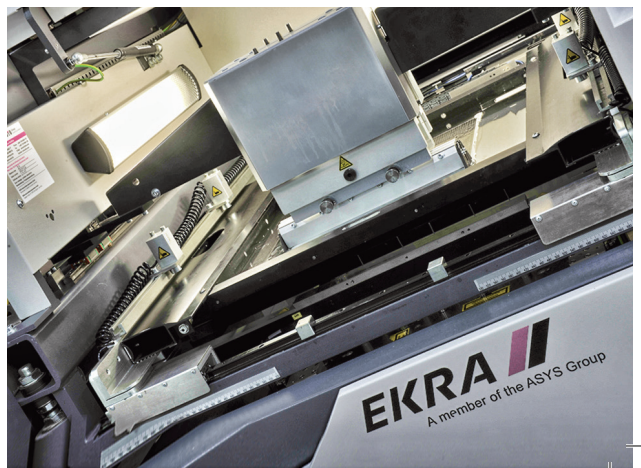
Extensive use of 3D printing technology and 3D-prototyping during the development of cases and PCBs allows us to check the design elements quickly and make changes to the product well before the start of batch production. To assess the behavior of devices



and components in real and extreme conditions we use a climatic chamber, which allows us to conduct temperature-cycle testing of samples and simulate the required climatic zones, change of seasons and the critical heating and cooling.

During the development of almost any electronic device we simultaneously work in three directions: on the design of its hardware, its firmware and software.







MANUFACTURE

Once the unit has been designed and tested, it goes into production. Professional engineers supervise and optimize the manufacturing process for all stages of the production.

The production starts with the application of solder paste to PCB using screen and stencil printer integrated in the production line.

The next step is provided with **MYDATA** automatic and precision high-speed chip mounters. Optimal task assignment between mounters provides dramatic performance increase of production line. Due to careful timing, PCBs are delivered from one mounter into the next mounter without interruption of operating process for a moment.

TechnoKom is one of the first manufacturers in Russia using Vapour Phase Soldering Technology in production. Nowadays it is the most innovative and advanced technology, which is used for soldering. In our production we use the **ASSCON VP1000** vapour phase

soldering system. Due to this fact the optimum temperature is ensured at all component positions, excluding over- and underheatings, which is typical for conventional soldering systems. Application of vapour phase soldering system provides fault-free soldering of complex components and PCBs.

Automated conveyor connecting all units of the production line together is responsible for automatic waiting queue and delivery of printed boards from one unit to others. The assembling quality control is the essential part of our production.

Application of automated optical inspection machine by **NORDSON** reliably minimizes the risk of manufacturing defect. When any fault or unreliable joint is captured it is shown on the display of the computer, as well as the fault is reported to an operator. In complex conditions, we use **XT V 160** electronics X-ray inspection machine, which allows to look inside the PCB and its components.

The last step – multiphase PCB test using hi-tech equipment is guaranty of the high quality of our products.

Today the corporate group TechnoKom is a recognized leader in the design and manufacture of GPS/GLONASS satellite tracking systems and monitoring of vehicles and personnel in the Russian Federation.

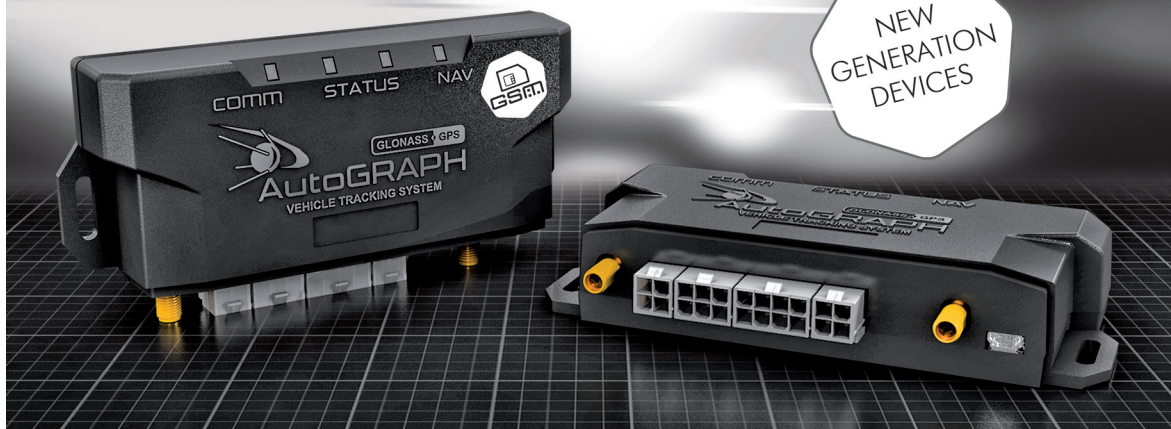
Our product has a wide range of applications and can be installed on cars and trains, planes and ships, agricultural and construction equipment. More than four hundred and fifty thousand navigation system controllers AutoGRAPH are operating at this very second on various Russian and foreign enterprises.

Our range of on-board controllers covers almost all areas of application and allows you to optimally and efficiently solve a wide variety of tasks for transport control and management.

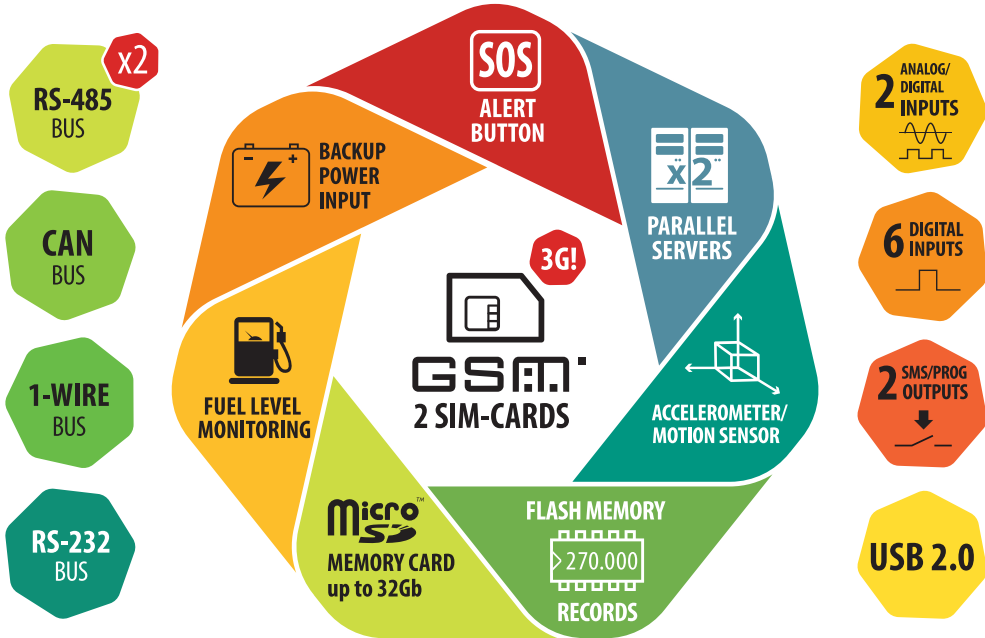
AutoGRAPH-GSM

VEHICLE & PERSONAL TRACKING SYSTEM

NEW GENERATION DEVICES



THE MOST COMMON TRACKING DEVICE IN RUSSIA AND ABROAD



GLONASS + GPS

WWT
World Wide Tracking

UTSYSTEM
Universal Tracking System



NAVIGATION & COMMUNICATION

- | | |
|----------------------|--|
| GNSS receiver | <ul style="list-style-type: none"> • uBlox MAX-M8Q • GLONASS + GPS / GALILEO / Beidou • 72 channels • A-GNSS, D-GPS • Cold start: 26 s¹ • Accuracy: 2.0 m¹ (CEP) • External antenna (SMA) |
| GSM module | <ul style="list-style-type: none"> • 3G UMTS² / GSM (GPRS / SMS) 850 / 900 / 1800 / 1900 MHz • 2 x SIM • External antenna (SMA) |

INTERFACES

- | | |
|-------------------------|--|
| Serial buses | <ul style="list-style-type: none"> • 2 x RS-485 (TIA / EIA-485-A) • 1 x CAN (SAE J1939 / FMS) • 1 x RS-232 • 1 x 1-Wire • 1 x USB 2.0 |
| Inputs / Outputs | <ul style="list-style-type: none"> • 6 x Digital inputs: 4 x active high, 2 x active low • 2 x Configurable (analog/digital) inputs • 2 x Digital outputs |

BASIC CHARACTERISTICS

- | | |
|------------------------------------|--|
| Memory | <ul style="list-style-type: none"> • FLASH (up to 270.000 records) • MicroSD (up to 32 GB) |
| Sensors | <ul style="list-style-type: none"> • Internal 3-axis accelerometer / motion sensor |
| External backup power input | <ul style="list-style-type: none"> • 12 VDC |
| Electrical | <ul style="list-style-type: none"> • Operating voltage: 10...50 V (max 60 V) • Power consumption (at 12 VDC, 22 °C)
recording state: 70 mA
data transferring state: 300 mA |
| Environmental | <ul style="list-style-type: none"> • Operating temperature: -40...+85 °C • Optional protective case: IP54 |
| Dimensions | <ul style="list-style-type: none"> • Standard case: 138 x 67 x 27 mm, 110 g • Protective case: 138 x 92 x 27 mm, 150 g |
| Average life time | <ul style="list-style-type: none"> • 10 years |

¹ With nominal GNSS signal levels -130 dBm.

² Optional.



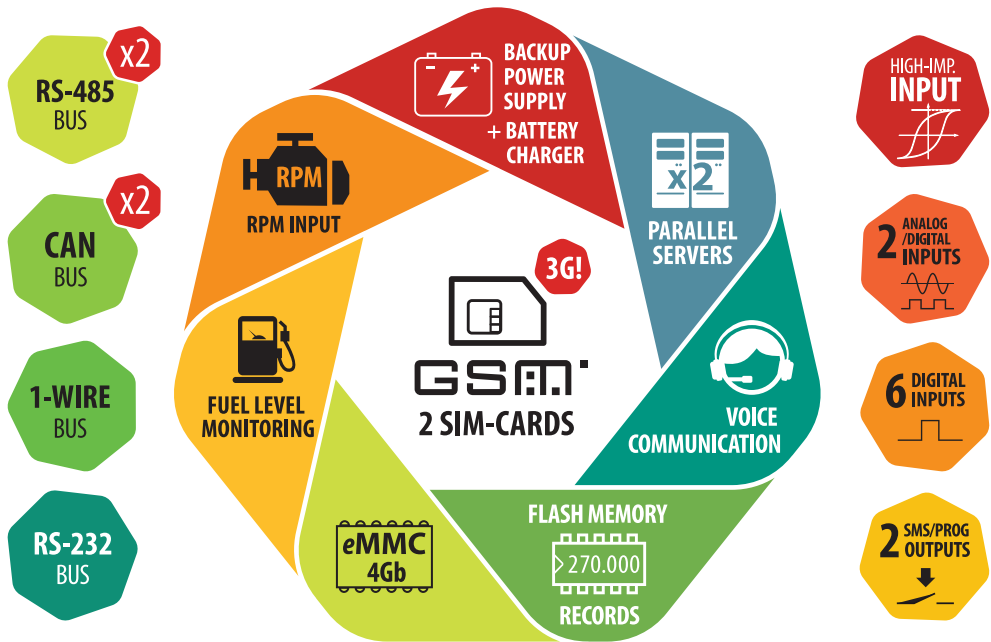
AutoGRAPH-GSM+

VEHICLE & PERSONAL
TRACKING SYSTEM

NEW
GENERATION
DEVICES



ULTIMATE SOLUTION FOR TRACKING VEHICLES OF ALL TYPES



GLONASS+GPS

WWT
World Wide Tracking

UTSYSTEM
Universal Tracking System

EAT

E8

CE

NAVIGATION & COMMUNICATION

- GNSS receiver**
 - uBlox MAX-M8Q
 - GLONASS + GPS / GALILEO / Beidou
 - 72 channels
 - A-GNSS, D-GPS
 - Cold start: 26 s¹
 - Accuracy: 2.0 m¹ (CEP)
 - External antenna (SMA)
- GSM module**
 - 3G UMTS² / GSM (GPRS / SMS) 850 / 900 / 1800 / 1900 MHz
 - 2 x SIM
 - External antenna (SMA)

INTERFACES

- Serial buses**
 - 2 x CAN (SAE J1939 / FMS)
 - 2 x RS-485 (TIA / EIA-485-A)
 - 1 x RS-232
 - 1 x 1-Wire
 - 1 x USB 2.0
- Inputs / Outputs**
 - 6 x Digital inputs: 4 x active high, 2 x active low
 - 2 x Configurable (analog/digital) inputs
 - 1 x High-impedance input
 - 2 x Digital outputs
 - 1 x RPM input
- Voice communication (GSM)**
 - Microphone input, internal loudspeaker amplifier
 - External Answer / Call button

BASIC CHARACTERISTICS

- Memory**
 - FLASH (up to 270.000 records)
 - eMMC 4GB
- Sensors**
 - Internal 3-axis accelerometer / motion sensor
- External backup battery (not supplied)**
 - Lead-acid, 12 V
 - Internal battery charger
 - Charging time: 30 h
- Electrical**
 - Operating voltage: 10...50 V (max 60 V)
 - Power consumption (at 12 VDC, 22 °C)
 - recording state: 80 mA
 - data transferring state: 320 mA
- Environmental**
 - Operating temperature: -40...+85 °C
 - Optional protective case: IP54
- Dimensions**
 - Standard case: 138 x 67 x 27 mm, 110 g
 - Protective case: 138 x 92 x 27 mm, 150 g
- Average life time**
 - 10 years

¹ With nominal GNSS signal levels -130 dBm.

² Optional.

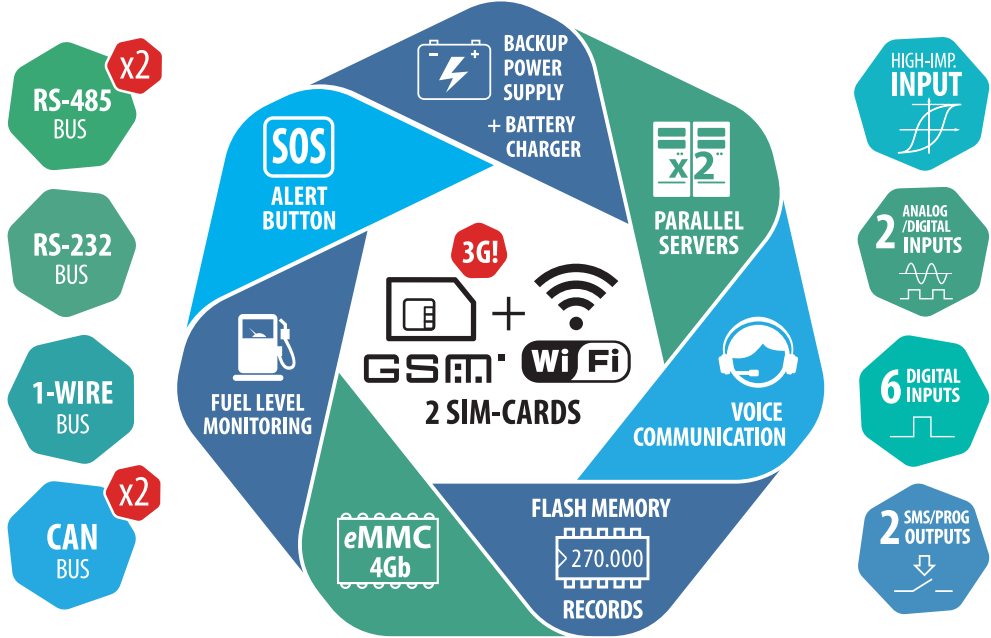


AutoGRAPH-GSM+WiFi

VEHICLE & PERSONAL TRACKING SYSTEM



EXTREMELY POWERFUL SOLUTION FOR FLEET MANAGEMENT



GLONASS+GPS

WWT
World Wide Tracking

UTSYSTEM
Universal Tracking System



NAVIGATION & COMMUNICATION

- GNSS receiver**
 - uBlox MAX-M8Q
 - GLONASS + GPS / GALILEO / Beidou
 - 72 channels
 - A-GNSS, D-GPS
 - Cold start: 26 s¹
 - Accuracy: 2.0 m¹ (CEP)
 - External antenna (SMA)
- GSM module**
 - 3G UMTS² / GSM (GPRS) 850 / 900 / 1800 / 1900 MHz
 - 2 x SIM
 - External antenna (SMA)
- Wi-Fi module**
 - 802.11 b / g / n
 - WPA2 Personal and Enterprise
 - Output Power: 17.0 dBm
 - Sensitivity: -94.7 dBm
 - External antenna (SMA)

INTERFACES

- Serial buses**
 - 2 x CAN (SAE J1939 / FMS)
 - 2 x RS-485 (TIA / EIA-485-A)
 - 1 x RS-232
 - 1 x 1-Wire
 - 1 x USB 2.0
- Inputs / Outputs**
 - 6 x Digital inputs: 4 x active high, 2 x active low
 - 2 x Configurable (analog/digital) inputs
 - 1 x High-impedance input
 - 2 x Digital outputs
 - 1 x RPM input
- Voice communication (GSM)**
 - Microphone input, internal loudspeaker amplifier
 - External Answer / Call button

BASIC CHARACTERISTICS

- Memory**
 - FLASH (up to 270.000 records)
 - eMMC 4GB
- Sensors**
 - Internal 3-axis accelerometer / motion sensor
- External backup battery (not supplied)**
 - Lead-acid, 12 V
 - Internal battery charger
 - Charging time: 30 h
- Electrical**
 - Operating voltage: 10...50 V (max 60 V)
 - Power consumption (at 12 VDC, 22 °C)
 - recording state: 80 mA
 - data transferring state: 320 mA
- Environmental**
 - Operating temperature: -40...+85 °C
 - Optional protective case: IP54
- Dimensions**
 - Standard case: 138 x 67 x 27 mm, 110 g
 - Protective case: 138 x 92 x 27 mm, 150 g
- Average life time**
 - 10 years

¹ With nominal GNSS signal levels -130 dBm.

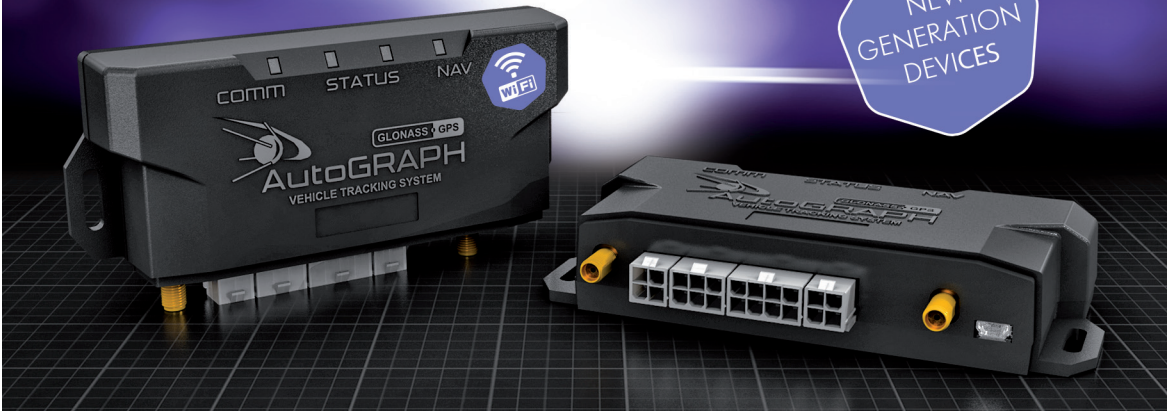
² Optional.



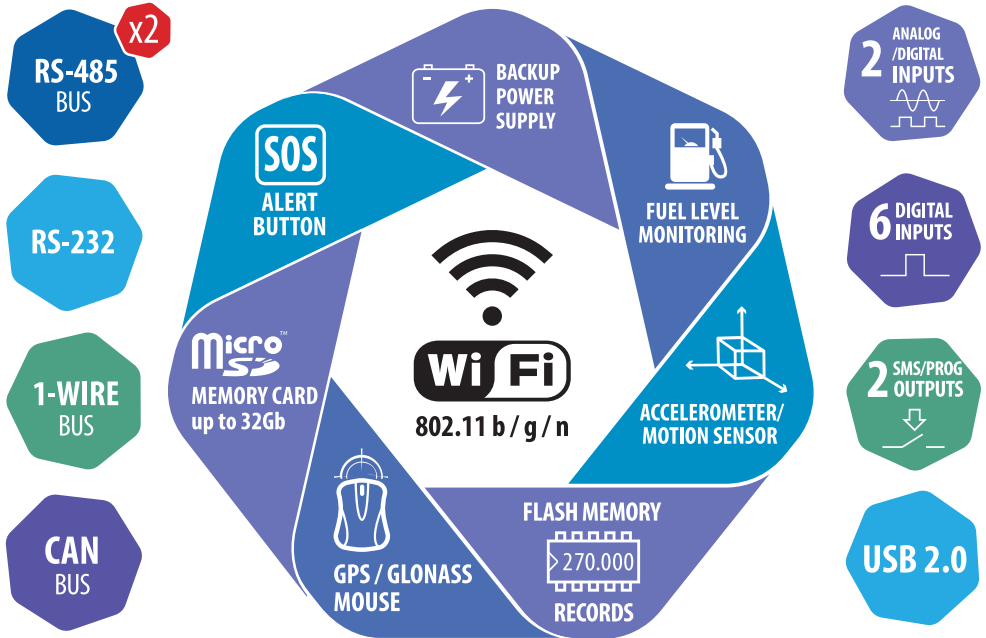
AutoGRAPH-WiFi

VEHICLE & PERSONAL
TRACKING SYSTEM

NEW
GENERATION
DEVICES



VEHICLE TRACKING OUT OF GSM AREA



GLONASS GPS

WWT
World Wide Tracking

UTSYSTEM
Universal Tracking System



NAVIGATION & COMMUNICATION

- GNSS receiver**
 - uBlox MAX-M8Q
 - GLONASS + GPS / GALILEO / Beidou
 - 72 channels
 - A-GNSS, D-GPS
 - Cold start: 26 s¹
 - Accuracy: 2.0 m¹ (CEP)
 - External antenna (SMA)
- Wi-Fi module**
 - 802.11 b / g / n
 - WPA2 Personal and Enterprise
 - Output Power: 17.0 dBm
 - Sensitivity: -94.7 dBm
 - External antenna (SMA)

INTERFACES

- Serial buses**
 - 2 x RS-485 (TIA / EIA-485-A)
 - 1 x CAN (SAE J1939 / FMS)
 - 1 x RS-232
 - 1 x 1-Wire
 - 1 x USB 2.0
- Inputs / Outputs**
 - 6 x Digital inputs: 4 x active high, 2 x active low
 - 2 x Configurable (analog/digital) inputs
 - 2 x Digital outputs

BASIC CHARACTERISTICS

- Memory**
 - FLASH (up to 270.000 records)
 - MicroSD (up to 32 GB)
- Sensors**
 - Internal 3-axis accelerometer / motion sensor
- External backup power input**
 - 12 VDC
- Electrical**
 - Operating voltage: 10...50 V (max 60 V)
 - Power consumption (at 12 VDC, 22 °C)
 recording state: 70 mA
 data transferring state: 300 mA
- Environmental**
 - Operating temperature: -40...+85 °C
 - Optional protective case: IP54
- Dimensions**
 - Standard case: 138 x 67 x 27 mm, 110 g
 - Protective case: 138 x 92 x 27 mm, 150 g
- Average life time**
 - 10 years

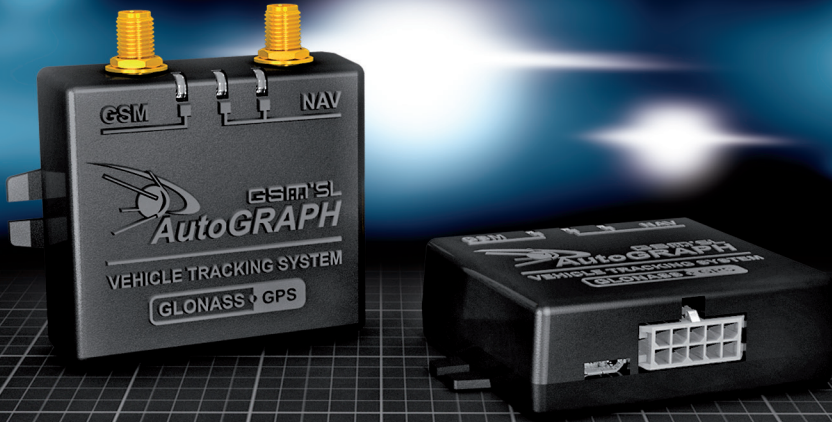
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¹ With nominal GNSS signal levels -130 dBm.



AutoGRAPH-SL

VEHICLE & PERSONAL
TRACKING SYSTEM



ULTRA SMALL SIZE WITH GREAT SET OF ADVANCED FEATURES



GLONASS + GPS

WWT
World Wide Tracking

UTSYSTEM
Universal Tracking System



NAVIGATION & COMMUNICATION

- GNSS receiver**
 - uBlox MAX-M8Q
 - GLONASS + GPS / GALILEO / Beidou
 - 72 channels
 - A-GNSS, D-GPS
 - Cold start: 26 s¹
 - Accuracy: 2.0 m¹ (CEP)
 - External antenna (SMA)
- GSM module**
 - GSM (GPRS / SMS) 850 / 900 / 1800 / 1900 MHz
 - 2 x SIM
 - External antenna (SMA)

INTERFACES

- Serial buses**
 - 1 x RS-485 (TIA / EIA-485-A)
 - 1 x CAN (SAE J1939 / FMS)
 - 1 x USB 2.0
- Inputs / Outputs**
 - 2 x Digital inputs: 1 x active high, 1 x active low
 - 1 x High-impedance input
 - 1 x Digital output

BASIC CHARACTERISTICS

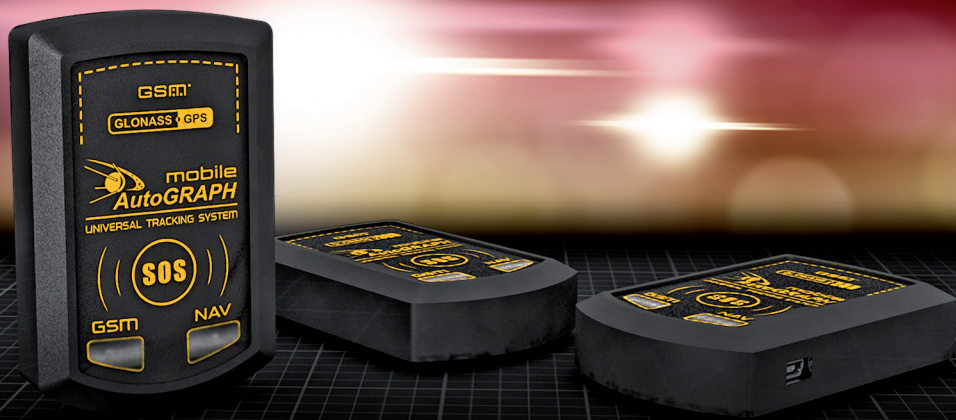
- Memory**
 - FLASH (up to 270.000 records)
- Sensors**
 - Internal 3-axis accelerometer / motion sensor
- Electrical**
 - Operating voltage: 10...50 V (max 60 V)
 - Power consumption (at 12 VDC, 22 °C)
 - recording state: 50 mA
 - data transferring state: 200 mA
- Environmental**
 - Operating temperature: -40...+85 °C
- Dimensions**
 - 65 x 50 x 20 mm, 50 g
- Average life time**
 - 10 years

¹ With nominal GNSS signal levels -130 dBm.

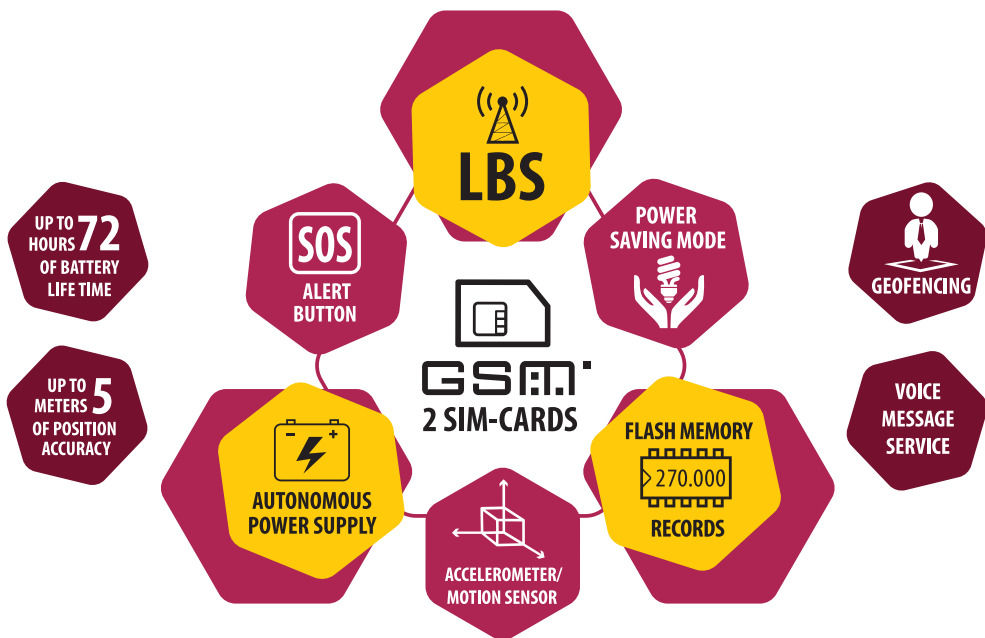


AutoGRAPH-Mobile

VEHICLE & PERSONAL
TRACKING SYSTEM



RELIABLE SOLUTION FOR PERSONAL TRACKING



NAVIGATION & COMMUNICATION

- Location**
 - GNSS, LBS
- GNSS receiver**
 - uBlox MAX-M8Q
 - GLONASS + GPS / GALILEO / Beidou
 - 72 channels
 - A-GNSS, D-GPS
 - Cold start: 26 s¹
 - Accuracy: 2.0 m¹ (CEP)
 - External antenna (SMA)
- GSM module**
 - GSM (GPRS / SMS) 850 / 900 / 1800 / 1900 MHz
 - 2 x SIM
 - Internal antenna

BASIC CHARACTERISTICS

- Memory**
 - FLASH (up to 270.000 records)
- Connection to PC**
 - USB 2.0
- Sensors**
 - Internal 3-axis accelerometer / motion sensor
- Battery**
 - Li-Ion, 3.7 V, 1800 mAh
 - Charging via USB or power adapter
 - Charging time: approx. 160 min
 - Operating / Charging voltage: 5 V
- Features**
 - Alert button (Voice message service / SMS)
 - Sleep mode
- Environmental**
 - Operating temperature: -20...+85 °C
 - Charging temperature: 0...+45 °C
- Dimensions**
 - 92 x 58 x 22 mm, 90 g
- Average life time**
 - 10 years

¹ With nominal GNSS signal levels -130 dBm.

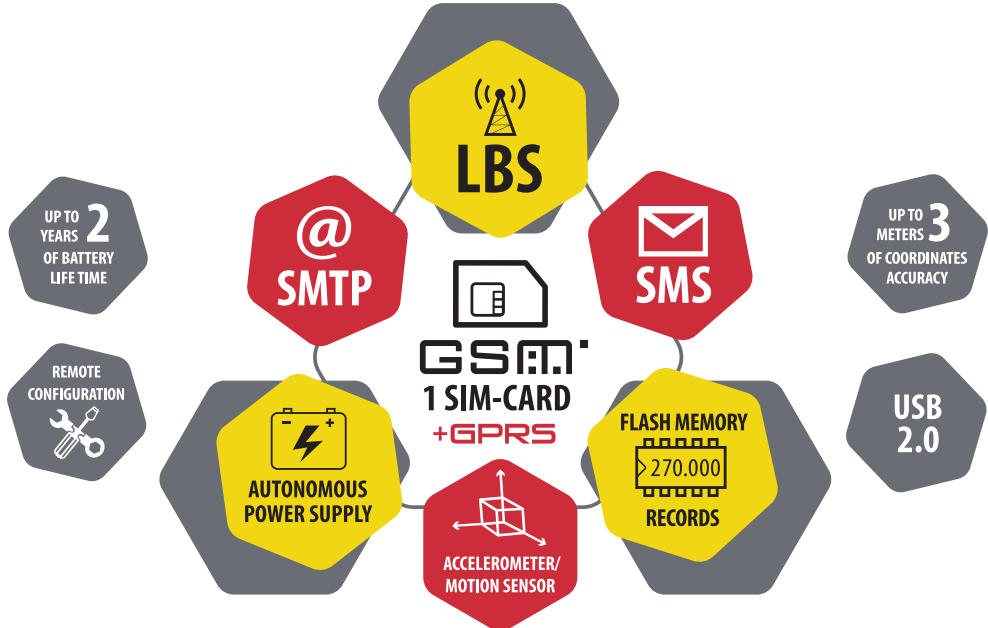


AutoGRAPH-STEALTH

VEHICLE & PERSONAL
TRACKING SYSTEM



AUTONOMOUS NAVIGATION AND SEARCHING SYSTEM



GLONASS + GPS

WWT
World Wide Tracking

UTSYSTEM
Universal Tracking System



NAVIGATION & COMMUNICATION

Location	<ul style="list-style-type: none"> • GNSS, LBS
Communication	<ul style="list-style-type: none"> • SMS / SMTP / GPRS
GNSS receiver	<ul style="list-style-type: none"> • uBlox IT530M, Mediatek MT3333 chipset • GLONASS + GPS / GALILEO / Beidou • 99 / 33 channels (search / track) • A-GNSS, D-GPS, LOCUS, AIC, AlwaysLocate™ • Cold start: 23 s¹ • Accuracy¹: 3.0 m (Position), 0.02 (Velocity) • Internal antenna
GSM module	<ul style="list-style-type: none"> • GSM (GPRS / SMS) 850 / 900 / 1800 / 1900 MHz • 1 x SIM • Internal antenna

BASIC CHARACTERISTICS

Memory	<ul style="list-style-type: none"> • Internal: FLASH (up to 270.000 records)
Connection to PC	<ul style="list-style-type: none"> • USB 2.0
Sensors²	<ul style="list-style-type: none"> • Internal 3-axis accelerometer / motion sensor
Battery	<ul style="list-style-type: none"> • Li/SOCI2, 7.2 V, 1700 mAh • Battery life time: up to 2 years³
Environmental	<ul style="list-style-type: none"> • Operating temperature: -40...+85 °C
Dimensions	<ul style="list-style-type: none"> • 75 x 48 x 21 mm, 80 g
Average life time	<ul style="list-style-type: none"> • 10 years

¹ With nominal GNSS signal levels -130 dBm.

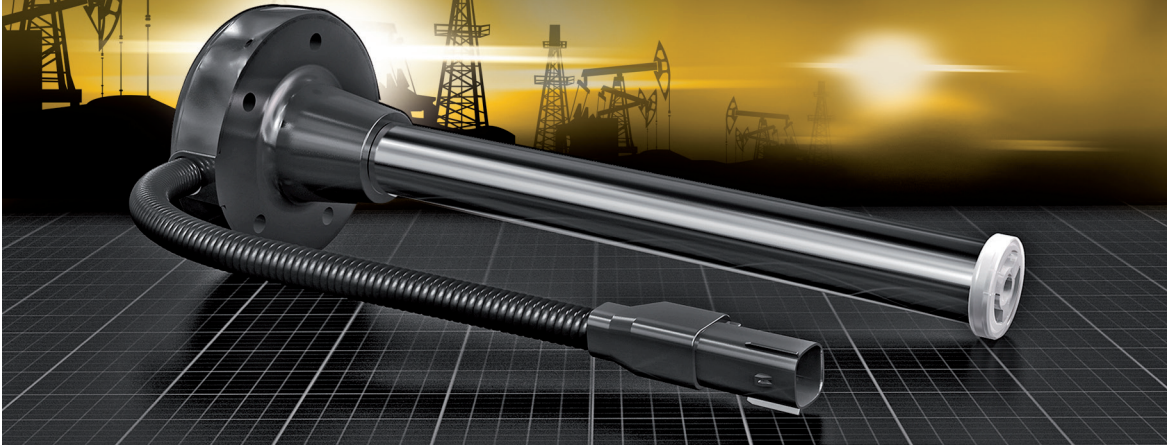
² Optional.

³ Under normal use, battery life time amounts up to 2 years. Battery capacity is enough to send 1200 messages with coordinates (Email, SMS and data to server).

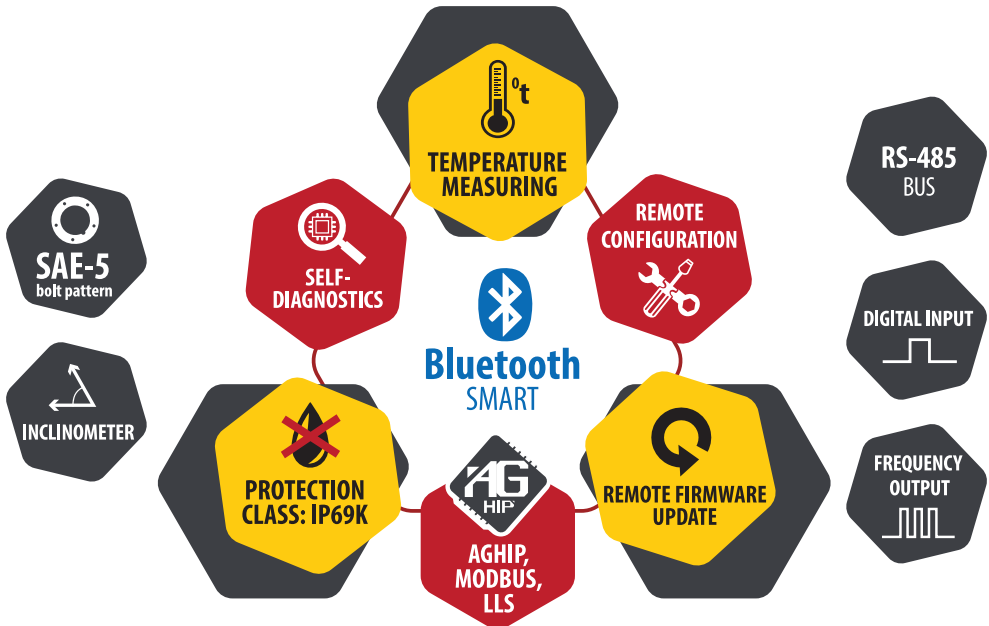


TKLS FUEL LEVEL SENSOR

VEHICLE & PERSONAL
TRACKING SYSTEM



SMART FUEL LEVEL SENSOR. PROVEN
EFFICIENCY, RELIABILITY AND QUALITY



GLONASS GPS

WWT
World Wide Tracking

UTSYSTEM
Universal Tracking System



BASIC CHARACTERISTICS

- Interfaces**
 - 1 x RS-485 (TIA / EIA-485-A)
 - 1 x Frequency output
 - 1 x Digital input
- Communication protocols (RS-485)**
 - AGHIP (AutoGRAPH Hardware Interface Protocol),
 - LLS, Modbus
- Bluetooth (BLE)**
 - Yes
- Sensors**
 - Internal 3-axis accelerometer / inclinometer
- Features & services**
 - Self-diagnostics, Error reports, Logging
 - Remote configuration: BLE, RS-485
 - Remote firmware update

FREQUENCY OUTPUT

- Output type**
 - Open collector
- Output frequency range**
 - 100...3000 Hz
- Maximum load current**
 - 200 mA

MEASURING CHARACTERISTICS

- Operational liquids**
 - Gasoline, fuel oil
- Fuel level measuring**
 - Accuracy: $\leq 1\%$
 - Resolution: 12 bit
- Temperature measuring**
 - Measuring range: $-40\dots+85\text{ }^{\circ}\text{C}$
 - Accuracy: $\pm 1\text{ }^{\circ}\text{C}$

OPERATIONAL CONDITIONS

- Electrical**
 - Operating voltage: 7...60 V
 - Power consumption (at 12 VDC, 22 $^{\circ}\text{C}$): 30 mA
- Environmental**
 - Operating temperature: $-40\dots+85\text{ }^{\circ}\text{C}$
 - Protection class: IP69K

OTHERS

- Dimensions**
 - Probe length: 750 / 1000 / 1500 / 2000 mm
- Mounting type**
 - SAE 5-bolt pattern
- Average life time**
 - 10 years



AutoGRAPH-NAVIGATOR

VEHICLE & PERSONAL TRACKING SYSTEM



DRIVER ASSISTANT AND NAVIGATION SYSTEM



GLONASS + GPS

WWT
World Wide Tracking

UTSYSTEM
Universal Tracking System



NAVIGATION & COMMUNICATION

- GNSS receiver**
 - uBlox MAX-M8Q
 - GLONASS + GPS / GALILEO / Beidou
 - 72 channels, A-GNSS, D-GPS
 - Cold start: 26 s¹
 - Accuracy: 2.0 m¹ (CEP)
 - Internal antenna (SMA)
- GSM module**
 - 3G UMTS² / GSM (GPRS / SMS) 850 / 900 / 1800 / 1900 MHz
 - 2 x SIM
 - Internal antenna
- Wireless**
 - Wi-Fi² (802.11 b / g / n)
 - Bluetooth (BLE)

PERFORMANCE

- Processor**
 - ARM Cortex-A8 Core
 - AM3354, 1GHz
- Memory**
 - RAM: 512 MB
 - External: MicroSD(up to 32 GB)
- Display**
 - 7 inch, 800 x 480
 - TFT, touchscreen
- OS**
 - Microsoft Windows Embedded Compact 7.0

INTERFACES AND FEATURES

- Interfaces**
 - 1 x RS-232
 - 1 x USB 2.0
- Sensors**
 - Internal 3-axis accelerometer / motion sensor
- Voice communication (GSM)**
 - Internal microphone
 - Internal loudspeaker amplifier
- Smart features**
 - Connection to AutoGRAPH device
 - Routing service
 - Task management
 - Different modes: Navigation, Auto-information
 - Supporting maps: internet, vector, raster

POWER SUPPLY

- Electrical**
 - Operating voltage: 10...50 V
 - Power consumption (at 12 VDC, 22 °C) 700 mA
- Internal backup battery**
 - Li-Polymer, 4.2 V
 - 1500-4500 mAh
 - ~1 hours of autonomous operation

OTHER CHARACTERISTICS

- Environmental**
 - Operating temperature³: -40...+85 °C
- Dimensions**
 - 205 x 115 x 14 mm, 500 g
- Average life time**
 - 7 years

¹ With nominal GNSS signal levels -130 dBm.

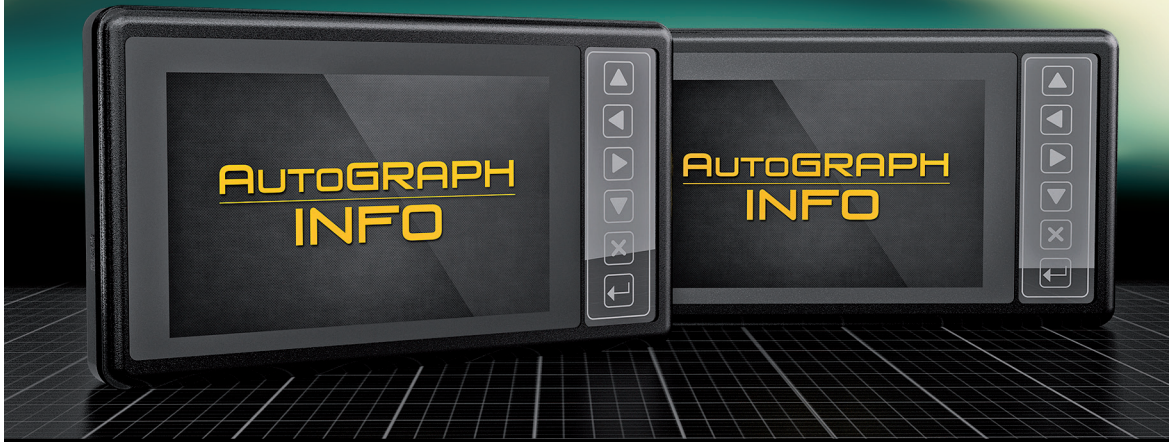
² Optional.

³ Does not apply to the battery.

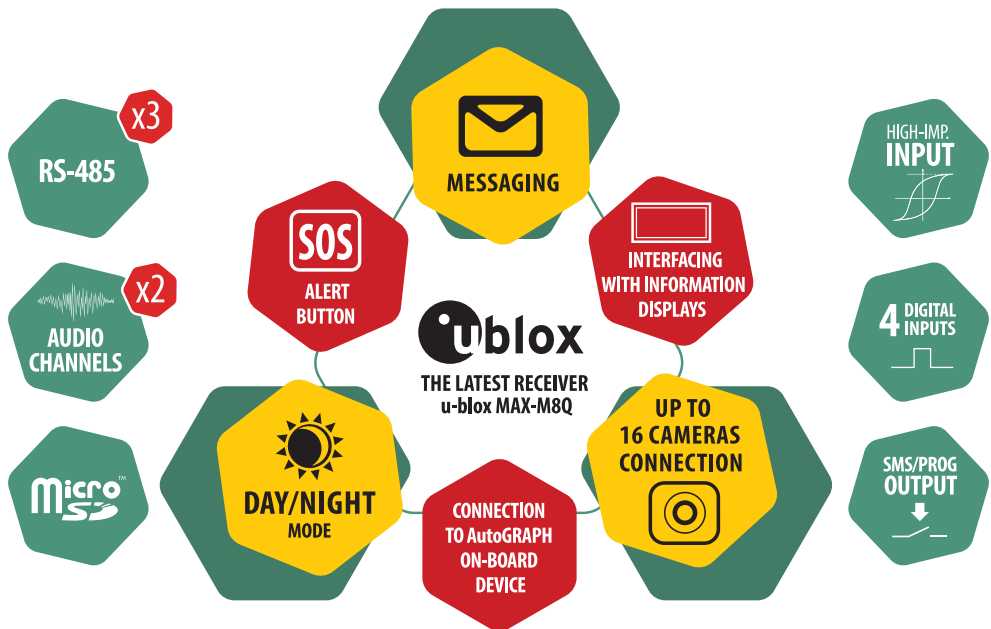


AutoGRAPH-INFO

VEHICLE & PERSONAL
TRACKING SYSTEM



INFORMATIONAL DISPLAY FOR INSTALLATION ON PUBLIC TRANSPORT



GLONASS+GPS

WWT
World Wide Tracking

UTSYSTEM
Universal Tracking System



NAVIGATION & COMMUNICATION

- GNSS receiver¹**
- uBlox MAX-M8Q
 - GLONASS + GPS / GALILEO / Beidou
 - 72 channels, A-GNSS, D-GPS
 - Cold start: 26 s²
 - Accuracy: 2.0 m² (CEP)
 - Internal antenna (SMA)

PERFORMANCE

- Processor**
- ARM Cortex
 - M4 LPC 4088FET208
- Memory**
- FLASH (up to 270.000 records)
 - MicroSD (up to 32 GB)
- Display**
- 5 inch, 800 x 480
 - TFT, touchscreen

INTERFACES

- Serial buses**
- 3 x RS-485
 - 1 x USB 2.0
- Inputs / Outputs**
- 4 x Digital inputs
 - 1 x High-impedance input
 - 1 x Digital output
- Audio**
- 2 x audio outputs
 - 6 W/output

OTHER CHARACTERISTICS

- Electrical**
- Operating voltage: DC 10...50 V (max 40 V)
 - Power consumption (at 12 VDC, 22 °C)
normal mode: 250 mA
playback mode: 1880 mA
- Environmental**
- Operating temperature: -40...+85 °C
- Dimensions**
- 160 x 96 x 37 mm, 270 g
- Average life time**
- 10 years

¹ Optional.

² With nominal GNSS signal levels -130 dBm.



AutoGRAPH IP54 CASE

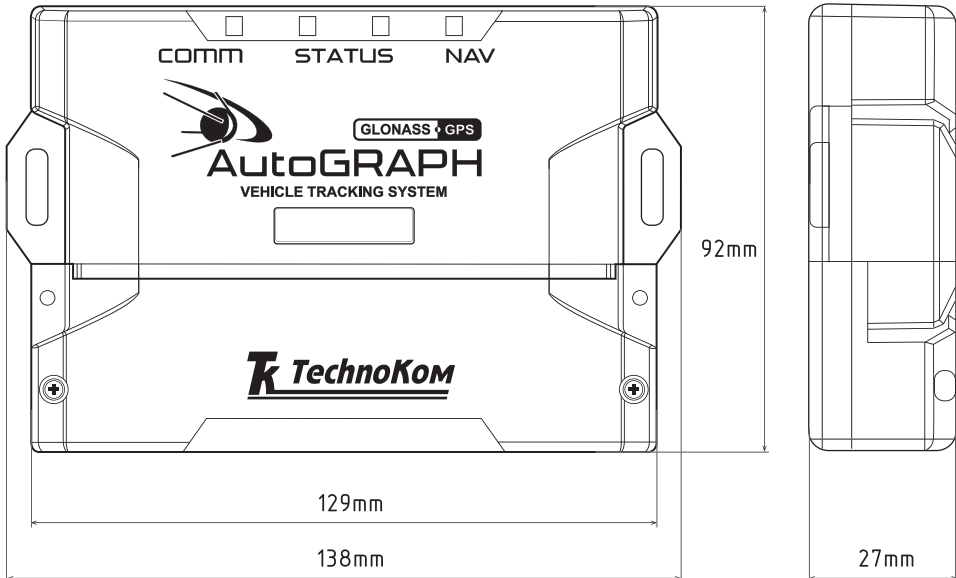
VEHICLE & PERSONAL
TRACKING SYSTEM

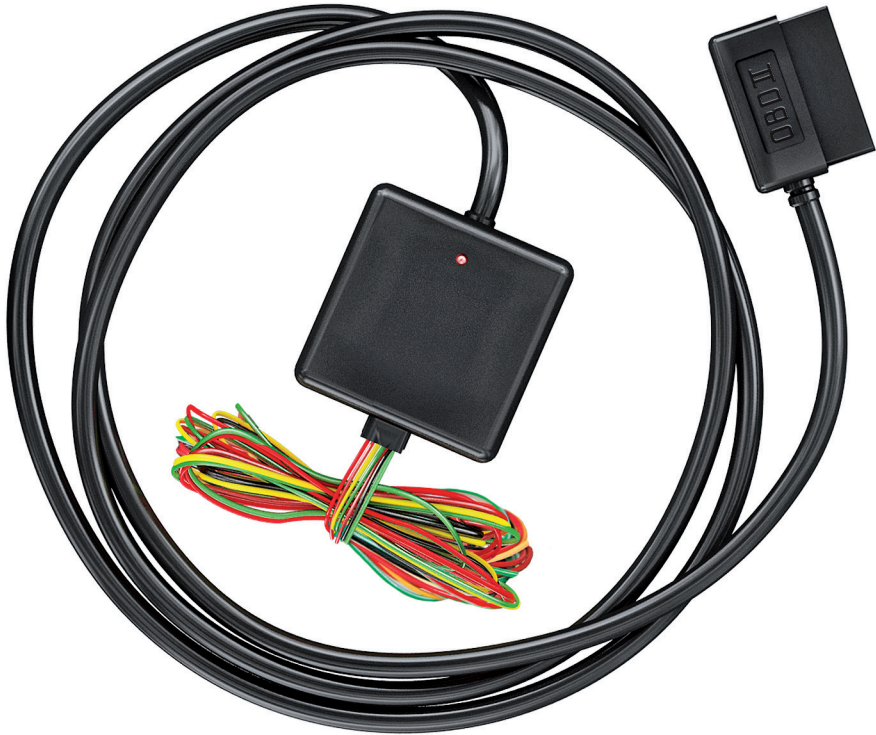


FOR NEW
GENERATION
DEVICES

OPTIONAL
HIGH-
PROTECTIVE
CASE

PROTECTIVE CASE





TK-OBD2LOG ADAPTER

BASIC CHARACTERISTICS

- | | |
|--------------------------------------|--|
| Supported OBD-II standards | <ul style="list-style-type: none">• ISO 15765-4 (CAN)• ISO 14230-4 (Keyword Protocol 2000)• ISO 9141-2• SAE J1850 VPW• SAE J1850 PWM |
| Connection to external device | <ul style="list-style-type: none">• CAN (SAE J1939) |
| Electrical | <ul style="list-style-type: none">• Operating Voltage: 10...50 V• Power Consumption (at 12 VDC, 22 °C): 80 mA |
| Operating temperature | <ul style="list-style-type: none">• -40...+85 °C |
| Dimensions | <ul style="list-style-type: none">• 50 x 50 x 20 mm |





RPM SENSOR

BASIC CHARACTERISTICS

- | | |
|------------------------------|---|
| Outputs | <ul style="list-style-type: none">• Type: open-collector• 1 x digital output: engine indicating• 1 x digital output: output frequency divider (by 10) |
| Electrical | <ul style="list-style-type: none">• Operating voltage: 7.5...40 V |
| Operating temperature | <ul style="list-style-type: none">• -40...+85 °C |
| Dimensions | <ul style="list-style-type: none">• 31 x 26 x 12 mm• Cable length: 1.2 m |
| Average life time | <ul style="list-style-type: none">• 10 years |





1-WIRE TEMPERATURE SENSOR

BASIC CHARACTERISTICS

Temperature measuring	<ul style="list-style-type: none">• Measuring range: -55...+125 °C• Measuring accuracy: 0.5 °C
Operating voltage	<ul style="list-style-type: none">• 10...30 V
Operating temperature	<ul style="list-style-type: none">• -40...+85 °C
Distance to sensitive element	<ul style="list-style-type: none">• 5...15 m
Dimensions	<ul style="list-style-type: none">• 30 x 25 x 13 mm
Average life time	<ul style="list-style-type: none">• 10 years



AutoGRAPH PERIPHERALS

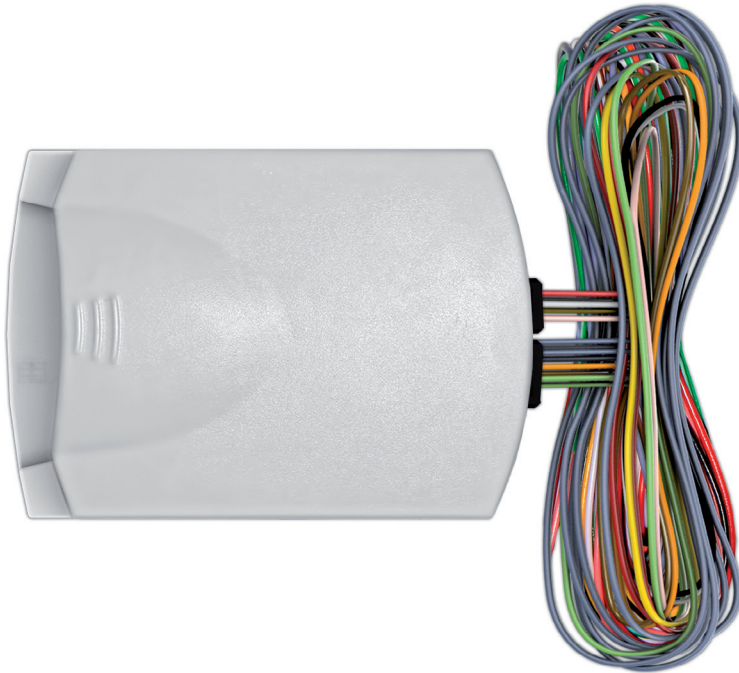


CAN-LOG 2 CONTROLLER

BASIC CHARACTERISTICS

Supported machinery	<ul style="list-style-type: none">• Building machinery• Agricultural machinery• Harvesting machinery• Lorry, light vehicle• Motor-buses
Interfaces	<ul style="list-style-type: none">• 1 x RS-232• 2 x CAN
Electrical	<ul style="list-style-type: none">• Operating Voltage: 10...50 V• Power Consumption (at 12 VDC, 22 °C): 40 mA
Operating temperature	<ul style="list-style-type: none">• -40...+85 °C
Dimensions	<ul style="list-style-type: none">• 50 x 50 x 20 mm
Average life time	<ul style="list-style-type: none">• 10 years



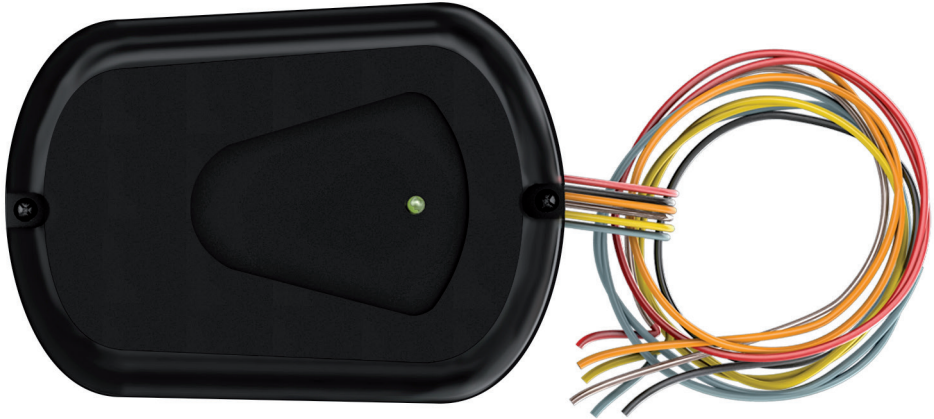


CardReader-SMART

BASIC CHARACTERISTICS

- | | |
|------------------------------|--|
| Supported cards | • RFID (EM-Marlin), Smart Card |
| Interfaces | • 1 x RS-485 (TIA / EIA-485-A)
• 1 x 1-Wire
• 1 x USB 2.0 |
| Inputs / Outputs | • 4 x programmable digital outputs
• 2 x preset digital outputs
• 2 x digital inputs |
| Operating voltage | • 10...50 V |
| Operating temperature | • -40...+85 °C |
| Dimensions | • 118 x 83 x 29 mm, 110 g |
| Average life time | • 10 years |





CardReader-RFID

BASIC CHARACTERISTICS

- | | |
|------------------------------|--|
| Supported cards | • RFID (EM-Marin) |
| Interfaces | • 1 x RS-485 (TIA / EIA-485-A)
• 1 x USB 2.0 |
| Inputs / Outputs | • 1 x programmable digital output
• 1 x digital input |
| Operating voltage | • 10...50 V |
| Operating temperature | • -40...+85 °C |
| Dimensions | • 94 x 65 x 18 mm, 150 g |
| Average life time | • 10 years |



AutoGRAPH SOFTWARE



iOS

AutoGRAPH
NET

AutoGRAPH
WEB

AutoGRAPH
Mobile



- High-scaled multi-platform and multi-lingual professional AVL and fleet management software
- Flexible accommodation to consumer`s purposes, absolutely configurable and extendable module system
- Wide opportunities for analytics, powerful report system, report constructor
- Integration with report systems and management systems of the company, open API for extentions plugins
- Total control of motion parameters, operation, condition of sensors and data buses of monitoring objects

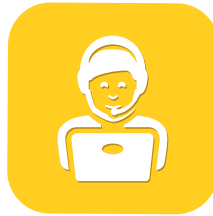


AUTOGRAPH SOFTWARE

FEATURES AND BENEFITS



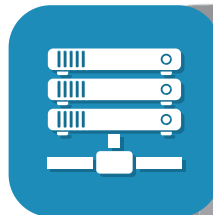
- Real-Time Fleet Tracking
- Trips History Playback
- Group Tracking
- Object's Cursor & Track Coloring
- MultiLevel Assets Hierarchy
- Flexible Trips Splitting
- MultiTrack Feature
- Static and Moving Control Points Support
- GeoFences and Landmarks
- Vehicle Status Tracking
- Trip Parameters Control



- Route Optimization
- Job Schedule Board
- Maintenance Reminders
- Dispatching
- Fleet, Driver & Team Management



- Real-time Alerts
- Overspeed Control
- Multi Channel Temperature Control
- Panic Button Support
- Event Management
- Tyre Pressure Control



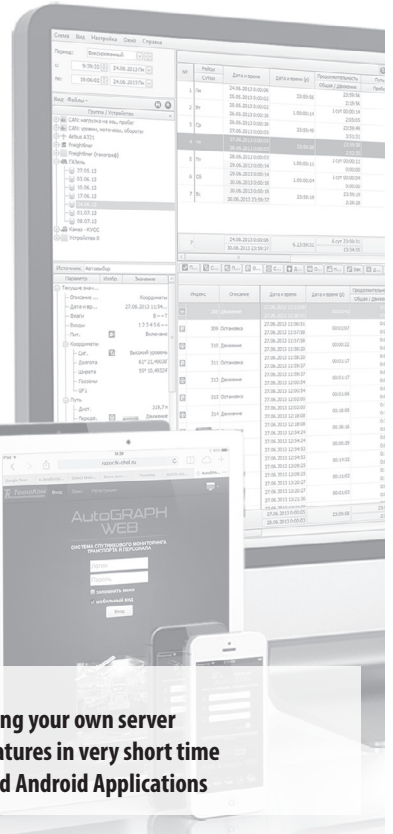
Hosted Software

- No problem with supporting your own server
- Comes with all needed features in very short time
- Free Desktop, Web, iOS and Android Applications

GPS tracking business without big investments
Manage and charge your users for service

Server Software

- Build your own GPS tracking server
- No monthly fees for software
- Unlimited number of users and devices
- Free Desktop, Web, iOS and Android Applications



AUTOGRAPH SOFTWARE



- Enterprise KPI Dashboard
- Powerful and Flexible Reports System
- Automated and Scheduled Reports
- TimeLine View
- Powerful Charts and Diagrams Constructor



- Multi-Map Tile View
- Vector, Raster and Internet Maps Support
- Powerful MultiGIS Engine
- Live Fleet Map Website Integration



- Role-based Users Hierarchy
- Multi Languages & Time Zones Support
- Open and Extensive API for Integration
- User Friendly Fully Customizable Interface
- Flexible Module System
- Multimonitor Configuration Support
- Unlimited Number of Workplaces



- Custom Virtual Sensors Support
- CAN bus data reading
- User Definable Fields and Parameters
- Passengers Counting
- Treated Area Control
- Small Aircraft Special Features
- Discrete, Analog and Digital Sensors Support



- Powerful Fuel Management
- Refueling and Fuel Draining Detection



- Driver ID and Automatic Driver Assignment
- 2-Way Messaging





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