HELIOS

real-time
fleet management
and security

Helios

"the Ruler of the Sun, believed to be the
All-Seeing " according to early Greek mythology

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GPS Global Solutions

| Eye in the Sky |

The most sophisticated unit for real-time fleet management and security applications

The comedian Sid Caesar once said: "The guy who invented the first wheel was a fool. The guy who invented the other three, he was a genius "!
Our at Manufacturers didn't invent the vehicle location system. We invented the "other three wheels" that totally changed the world of vehicle location and raised it to perfection
Our products are fully adjusted to every need
They are fully customized to alert any type and combination of events, they enable automatic operation, and maintain stability and continuity. It is the only system that provides solutions to every conceivable need. The advanced wisdom of Helios enables us to offer you the useful information in a very practical and user-friendly way, that even the most complicated analysis automatically becomes simple and easy to use.

By using Helios products

You enjoy the easy and convenient use
of the system, due to its all-in-one solution base; its easy and simple installation; its integration with the local surroundings of the car or motorcycle; its flexibility to local needs; its compact size that includes built in antennas; its infinite applications; and its opportunities to broaden its future applications

You maintain stability
due to the state of the art OTA (over the air) ability to remotely upgrade the unit with new features and change settings within the existing firmware of the unit. Thereby, there is constant communication with the car or motorcycle even in the event of a malfunction.

You save
time and money because of the possibility to define different frequencies of transmission according to the local broadcast or Roaming.

You can take advantage
of the high quality of the system which complies with the Automotive industry standards.

You are in control
of every possible circumstance or situation. The open system and its platform allow integration of every situation, both simple and complicated.
For example:
You can define a request to change the broadcasting frequency automatically once the car enters a specific area and the door is opened.

You are confident
that in the event of an unusual situation the system will automatically be activated.
For example:
At the time of an accident, the system will automatically unlock the doors and beep every pre-set amount of minutes to identify the location of the car or motorcycle.

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General Specification

CPU	Type Memory:	NXP ARM Cortex-M3 Static RAM: 128kb ROM: 34kb Flash: 2048kb
Power	Voltage Range Consumption	8V – 28V (supported in same unit) 3mA in low power mode - up to 120mA in working mode can reach up to 300mA if battery is charged
* Backup Battery (optional)	Type Power	Lithium-ion Polymer 3.75V Helios Advanced Plus: 950 mAh / Helios TT: 550 mAh
GPRS - Cellular Modem Satellite Modem (external device) Data Messages	GSM Antenna type Network Channels Connection SMS GPRS	Quad Band (850, 900, 1800, 1900). Built in (concealed) GSM, CDMA, HSDPA, SMS, 3G (optional) RS232 Encrypted Protocol TCP/IP
Location	Type Time to First Fix (TTFF) Positioning Accuracy Antenna type	GPS, GLONASS (optional) 2 sec (hot start) 10m CEP (50%) Velocity: 0.2m/s (50%) Built in (concealed)
COMM Port	Type Speed	RS232 115,200 bps (Dafault)
I/Os (check per model)	Digital Inputs Digital Outputs Analog Inputs Pulses Counter CANBus	Helios Advanced Plus: Max 8/ Helios TT: Max 2 Helios Advanced Plus: Max 4/ Helios TT: Max 1 Helios Advanced Plus: Max 3/ Helios TT: Max 1 Max 1 (Helios Advanced Plus only) Included (Helios Advanced Plus only)
Accelerometer	Type Purpose	3-Axis, 20 mg accuracy, up to 8g Identify and report events of impact and accident
Alarm System	Immobilizer Disarming Options	External – Gradual Stop Key Pad, Dallas Key, Remote Control, RF Keypad
Dimensions	Size Weight	Helios Advanced Plus: 21H x 60B x 107L (mm) 0,82H x 2,36B x 4,21L (inch) Helios TT: 21H x 60B x 57L (mm) 0,82H x 2,36W x 2,24L (inch) Helios Advanced Plus: 150g (5.29 Oz) Helios TT: 120g 4.23 (Oz)
Environmental	Operating Temp Storage Temp Humidity	-40°C (-40°F) - 60°C (140°F) -40°C (-40°F) - 85°C (185°F) Max 50%

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Key Features

Fleet

- Programmable Events: Events can be defined to both transmit and act on complex events. For example – activating the horn and transmitting when a tanker truck activates its engine while unloading fuel at the fuel depot.
- Speed restrictions: Programmable alerts whenever the vehicle goes above/ below a pre-defined speed, to detect over hastiness and unauthorized stops.
- Mileage: Ability to alert every specific number of kilometres.
- Curve detection: Support for transmitting at every turn, for better route visualization.
- Motor is running while stationary: Alert when the motor is running and the vehicle is left stationary at a specified time range.
- Perimeter based alerts: Geo-fencing alerts when a vehicle is entering/ leaving a specified area at a specified time.
- Values Monitoring: Monitoring of analogue inputs to alert when voltage/ temperature are exceeding.
- Driver Identification: By using different Dallas iButton, Remote Controls, Keypad or RF Keypad Codes, the unit sends the code of the current vehicle driver to the centre.
- Mileage Transmissions: Periodic mileage transmissions for the needed vehicle's maintenance.
- Automated Tracking: Automatic support for vehicle tracking at specified times, without sending additional commands to the vehicle.

Alarm System

- Complete Security System: Complete operational security system with different logic states to detect break-ins and report to the centre.
- Times Programming: Complete control over the alarm system timing (the intervals at which the unit stays at each of the alarm system logic modes).
- Wakeup from accelerometer: the unit can wake up from an event triggered by the accelerometer.
- Towing Detection: GPS-based detection of movement while the system is armed, produces a towing alert to the center.
- Low Power Warning: Warning transmission whenever the vehicle's main power goes below a predefined threshold.
- 4 Disarming Devices: Four disarming devices are available, including keypad and RF Keypad, remote control, and Dallas iButton.
- Gradual Stop: Option to gradually stop the vehicle by sending pulses to the immobilizer or fuel pump.

Vehicle and Driver Protection

- Emergency Button: Support for emergency button to invoke an immediate high-priority transmission to the center.
- Accident and Harsh Braking Detector: Built-in accelerometer serves as both accident and a harsh braking detector.
- Auto Lock: Support for locking/unlocking the doors whenever the motor is starting/stopping.

Inputs/Outputs

- Digital Inputs: Helios Advanced Plus: Eight digital inputs, usually used for Ignition, Emergency, Doors, Arming, and Disarming / Helios TT: Two digital inputs
- 1 Pulse Counter Input: To measure odometer pulses, or any sort of pulses generated by external devices. (Helios Advanced Plus only)
- Analog Inputs: Helios Advanced Plus: Three analog inputs, each can be set to work in two different measurement scales. Example: usages are external temperature sensors or fuel measurement without a need for external sensor / Helios TT: One analog input is optional (one digital input can be used as an analog input).

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- Inputs programming: Each input can be programmed to be used in order to trigger transmissions under any condition, and to arm or disarm the security system.
- Main power indication: A main power measurement to indicate the vehicle's battery voltage.
- Canbus connection: Direct connection to the vehicle's computer using the Canbus protocol. (Helios Advanced Plus only)
- Odometer Support: Support for digital odometer to read its pulses and calculate the vehicle's mileage. (Helios Advanced Plus only)
- Digital Outputs: Helios Advanced Plus: Four digital outputs, usually used for Lock, Unlock, Siren, and Immobilizer / Helios TT: One digital output
- Pulses Width Modification: Ability to set the width and number of the lock and unlock pulses.

Communication

- Cellular Connectivity: Support for GSM networks (GPRS or optional 3G), while using both the SMS channel and the data channel. Supported bands are 850/900/1800/1900 MHz Optional support for CDMA, HSDPA networks.
- Satellite Connectivity: Using an external device, an Iridium connection may be used when out of cellular coverage.
- TCP Connectivity: Support for the GPRS/1x TCP/IP networks by either staying online at all times, or coming online when a transmission is initiated.
- DNS Support: Connection to a server by its host name.
- Backup Server: Backup host name support in case of main server has gone offline.
- Encryption: Protocol encryption to provide maximum security between the vehicle and the centre.
- External Protocol Support: Support for external devices for 3rd party protocols, such as text terminal or RFID readers.
- Navigation Support: Support for external devices for navigation, such as handheld or laptop computers.
- Anti-jamming: Support for a gradual stop of the vehicle if a theft transmission has failed due to communication frequencies jamming.
- Compact Protocol: Less than 70 bytes per message enables very small bandwidth usage and saved communication costs.
- Voice Calls: Hands-free kit to support voice call from and to the vehicle. Ability to initiate a voice call from the unit without the knowledge of the driver.

Over-The-Air commands

- Firmware Upgrade: Over the air firmware upgrade to apply new features to already-installed units.
- Status Requests: Ability to request the latest status of the vehicle, and receive the entire information about all the inputs, outputs, and location information.
- Tracking: Option to remotely engage periodic transmissions from the unit at intervals of 10 seconds to 5 days.
- Tracking Interval By Channel: Different transmissions intervals can be set to each communication channel used –SMS/GPRS/Roaming.
- Parameters Programming: Complete programming of each and every one of the unit's parameters over the air.
- Remote Arm/Disarm: Option to arm or disarm the vehicle from the centre.
- Output State Changing: Option to remotely activate/ deactivate different outputs, such as locking/unlocking the doors, starting/ stopping the siren, activating/ deactivating the immobilizer.
- Learn Dallas/Remote Control: Remote activation of extra Dallas iButton and Remote Control.

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- Mileage setting: Remote update to synchronize the unit and the vehicle internal mileage counter.
- Voice Call Request: Request the unit to call a specific number for a voice call to communicate with the driver and/or hear the activity inside the vehicle.
- Text Messaging: Send a text message to the vehicle's text terminal.

Miscellaneous

- Garage Mode: Special condition in which the alarm system is turned off and no emergency transmissions are sent. This condition is time-limited.
- Internal Logging: Whenever a transmission has failed to be sent, the entire message is saved to the memory for later transmission. 15 thousand complete messages, including statuses, can be recorded this way.
- Low Power Mode: Option to switch to a low power mode (up to 3mA) whenever the alarm system is armed. Best used for motorcycles.
- Fully Certified: Fully certified and complies with the highest standards of the automotive industry.

Location

- GPS Receiver: Built in GPS receiver allows real-time tracking and on-board location-based analysis.
- Mileage by GPS: Advanced algorithm to calculate the vehicle's mileage based on the GPS, without the need for any external connections to the vehicle's odometer.
- Last Location Saving: Saving of the vehicle's last position, in case of going out of GPS coverage.

Choose the Helios that suits your needs:

	Helios Advanced Plus	**Helios Hybrid**	**Helios TT**
GPS	+	+	+
GSM	+ (optional 3G, HSDPA and CDMA)	+ (optional 3G, HSDPA and CDMA)	+
Satellite Connectivity	-	+	-
Connector	24-pins Molex	24-pins Molex	10-pins Molex
Accelerometer	+	+	+
Canbus	+	+	-
Usage	Full fleet and security features. Can be used as standalone alarm system	Full fleet and security features. Can be used as standalone alarm system	Track & Trace
Advantage	Additional inputs/outputs Built-in accident and harsh braking detection	Constant communication around the world, even when out of cellular coverage Additional inputs/outputs Built-in accident and harsh braking detection	Low cost Waterresistant IP65 (optional) Detect the Towing detection even with very little Power Consumption
I/O	8 Digital inputs 3 Analog inputs 4 Digital outputs 1 pulses counter RS232 Canbus *Hands free input iButton/Keypad/RF Keypad/remote control input	8 Digital inputs 3 Analog inputs 4 Digital outputs 1 pulses counter RS232 Canbus *Hands free input iButton/Keypad/RF Keypad/ remote control input	2 Digital Inputs (one digital input can be used as an Analog input). 1 Digital output 1 Comm Port

When hands free Kit is used, the unit has 5 digital inputs and 2 analog inputs only.

Fuel consumption **monitoring**

Control your Gas expense

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Do you want to better manage your fuel consumption and reduce your vehicle fleet's running costs? Starcom GPS Global Solutions can help you to do this.

Fuel is today's largest expense for running a vehicle, making it one of the largest expenditures for operating a vehicle fleet. The escalating fuel pricing poses fleet owners with the challenge of lowering fuel consumption by improving driver usage of fuel. The main reasons for excessive fuel consumption in vehicles are driving style (hard acceleration/breaking, excessive speed, idling) and a lack of internal controls for fuel management. Starcom Systems delivers three different solutions for fuel-consumption monitoring to perfectly meet different usage requirements. All three solutions have been designed to: monitor fuel refills, observe driving patterns and present a comparison between the defined distance covered and actual fuel consumed, so that fuel theft detection is made possible.

1. **Helios AVL solution - OBD II** Using two wires, a direct connection to the vehicle's on-board diagnostics is made, providing very accurate fuel level readings.

2. **Helios AVL solution - Built-in fuel level sensor** The vehicle's existing built-in fuel level sensor is connected to Starcom System's automatically calibrated system using a simple one-wire connection and provides accurate and reliable information regarding the fuel level of the vehicle.

3. **Helios AVL unit and an External "cut-in" sensor** External "cut-in" sensor for when the built-in fuel level sensor (by the vehicle manufacturer) is unavailable or not accurate enough, Starcom System's provides a wide range of "cut-in" external sensors, providing very high accuracy and reliable information for both fuel tanks and mobile re-fuelers. Sensors lengths range from 55 cm to 4,000 cm.

Fuel Consumption Monitoring

The fuel consumption monitoring report presents information about every route the vehicle has taken, from ignition and until the key switch is turned off. For each route, the report will show the fuel consumed and distance covered in Litre/Km. In addition the report will indicate points at which the vehicle was refuelled and any sudden drops in fuel level detecting a possible case of fuel theft.

Statistics Available

Total work hours (engine)
Total mileage
Average fuel consumption (L/100km)
Total amount of suspicious fuel usage in litres
Total number of suspicious drops in fuel level
Number of times refuelled
Total amount of litres refuelled

*information displayed above is for the selected time period

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Driver Behaviour Report

Other essential factors affecting fuel consumption are driver behaviour patterns. For this reason the Fuel Consumption Monitoring Solutions offered by Starcom Systems also consist of a Driver Behaviour Report:

By using the driver behaviour report, you can identify drivers with bad driving styles, address the problem instantly and save unnecessary losses to your business.

Vehicle	Harsh Breaking	Accident	Speed Violation	Mileage (Km)	Work Time	Negative Score	Current Mileage (Km)
Vehicle 1	-	-	-	347	18h 12m	0	91751
Vehicle 2	-	-	-	0	0h 0m	0	82419
Vehicle 3	2 (435.5)	-	7 (124.4)	871	17h 35m	10	184968
Vehicle 4	-	-	37 (65.6)	1986	37h 53m	51	189701
Vehicle 5	1 (1813)	-	-	1813	165h 4m	1	111761
Vehicle 6	147 (8.2)	2 (611)	-	1221	183h 46m	122	109262
Vehicle 7	60 (23)	1 (1394)	-	1394	157h 18m	44	24294

Legend:

- Numbers in parentheses: Km per violations
- Score: Violations x 1000 - per Km

Over 20
Over50
Over 100

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Technical Specifications – External “cut-in” Sensor

Input:
Voltage: 4 – 70V

Output:
Current: 4 – 20mA
Voltage: 0 - 5V
Emulated resistive: 10 – 500 Ω
Resolution: 0.5mm

Material:
Housing: Industrial aluminium

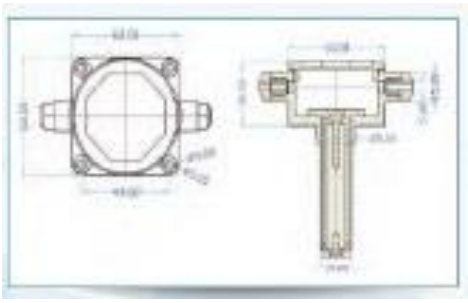
Medium types: Diesel; biodiesel; kerosene; petrol; not Voltage: 4 – 70V suitable for conducting medium

Environment ratings:
Temperature-operating: - 40°C to + 85°C
Temperature-storage: - 40°C to + 105°C
Consumption: 0.17W/5V, 0.24W/12V, 0.48W/24V
Digital: RS-232, EIA-485, CAN (option)
Baud rate: 2400, 4800, 9600, 57600, 115200
Accuracy: 0.5%
Electrode pole: Aluminium alloy
Sealing: IP67
Weight: 40 G (500mm)
Available lengths: 55cm, 70cm (for other lengths please contact us).

Fuel Level Sensor Price

Length of Sensor (cm)	Price
55	315.95 Euro
70	343.95 Euro

Dimensions



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Established in 2013 as a global distributor of GPS/GSM/Iridium and Hybrid Tracking, Monitoring and Reporting Systems.

We supply, sell, maintain, rent, lease and monitor both hardware and software systems that included a very large range of tracking systems using GPS/GSM/Iridium and Hybrid technologies.

These systems are designed to protect the complete range of possible asset protection and monitoring scenarios that include security, logistics management, control of fleets of vehicles, train cars, high value and exclusive vehicles, all designs and sizes of land and sea containers, valuables of every size and description as well as people, pets and livestock.

We also specially prepare systems based on the needs of our clients. We do develop bespoke (custom made or designed) systems which combine GPS/GSM Iridium and Hybrid tracking, monitoring and alerting systems with motion detection, light detection, contact detection and allows people to be informed immediately to any modern platform of any changes within any confined space or area anywhere on the worldwide.

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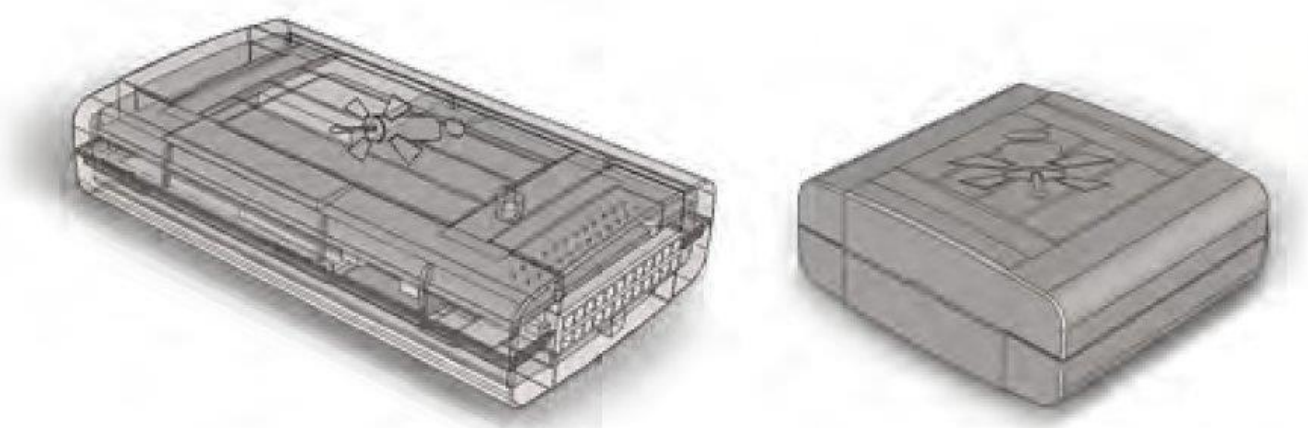

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