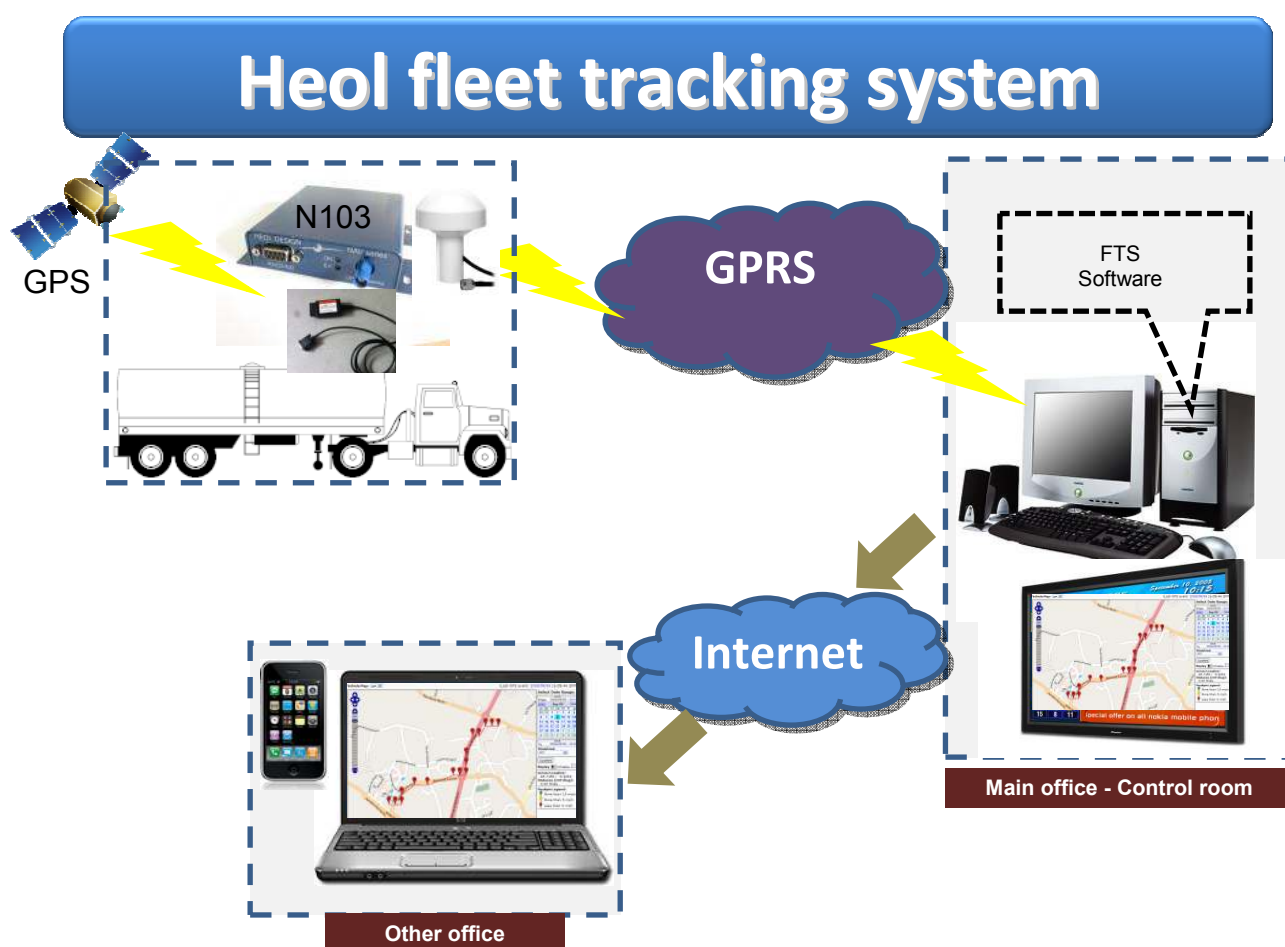




HEOL-N103-OBD, GPS/GPRS Tracking Module with On Board Diagnostic



RoHS
compliant
2002/95/EC

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HEOL-N103-OBD : RELIABILITY and ADVANCED FUNCTIONS

The automotive grade HEOL-N103-OBD module has been designed to provide accurate tracking information through a GSM/GPRS network. It also includes an OBD interface, providing several vehicle data from the CAN bus.

Based on a high performance GPS chipset, it delivers accurate position information, even in poor signal level environments (tree foliage, urban canyons).

The latest GPRS technology has been integrated in this module. It allows you to track vehicles (data reported to HEOL FTS server: position, speed, internal temperature, motor rpm, coolant temperature, fuel system status, air flow rate, motor temperature, 3D accelerometer data, and all other OBD available data). Using the Heol patented standby technology, the N103-OBD is an ultra-low power embedded tracking and reporting system.

Upon request, other advanced features could be integrated in the N103-OBD to interface with your system without the need to develop your own functions.

MAIN FEATURES:

Performance

- Very-high sensitivity of **-165dBm** enabling high performance in low level signals environments.
- Time to get first fix information is around **38s** (cold start).
- **Quad Band GPRS** modem, configured in UDP mode (using FTS server). E-mails and SMS can also be sent to report status of the module.
- **OBD** interface with universal connector. All European cars from 2001 (petrol) and 2004 (diesel) are supposed to be compatible to the OBD norm.
- Small size GPS/GSM antenna.
- **Optional back-up** capacitor with an autonomy of 30 days for hot start-up after a power cut.

Advanced features

- Fully programmable **standby** mode with less than **0.1µA** power consumption (patented). Wake up by internal RTC or external event (can be connected to door opening switch, or tilt/motion sensor).
- In option : **Data logging**: position, speed, time, internal temperature and accelerometer data backed-up to a 2M EPROM.
- **Logic and analog inputs/outputs** for your specific applications.
- **Customizable firmware** to fit your requirements.
- Firmware upgraded directly via RS232 link.

Protection

- **Metal housing**, ruggedized and compact. **IP65** available on request.
- **Protection** against short circuit and overvoltage on the antenna.
- **Robust** power supply, protected against transients and reverse polarity.

Compliance

- Connectors are compliant with **automotive standards**.
- According to **CE** directive, the HEOL-N103-OBD module has passed the following tests:
 - EN55022/55011 class B : conducted and radiated emissions.
 - EN61000-4-2 : Immunity to electrostatic discharges.
 - EN61000-4-3 : Immunity tests on electromagnetic fields radiated at radio-electrical frequencies, with 10V/m electromagnetic field.
 - EN61000-4-4 : Immunity to rapid transients.
 - EN61000-4-5 : Immunity to surge.
 - EN61000-4-6 : Immunity tests on conducted interference, induced by radio-electrical fields.
 - IS07637-1/2/3 (automotive environment).
- The HEOL-N103-OBD module is RoHS (lead free) compliant.

SPECIFICATIONS:

GPS Receiver	Type	66 channels
	Sensitivity	Tracking -165dBm
Accuracy	Horizontal (with SBAS)	<2 meters (50%), <4 meters (90%)
	Altitude (with SBAS)	<3 meters (50%), <5 meters (90%)
	Speed	0,06 m/sec (nominal)
	Time (pps)	±60 ns RMS
Initial acquisition time	Cold (Time to First Fix)	< 38 seconds (90%)
	Warm start	< 35 seconds (90%)
	Hot start	< 3 seconds (90%)
GPRS Modem	Radio Frequency	850 / 900 / 1800 / 1900
	Transmit Power	Class 4 : 2W, Class 1 : 1W
	Functions	GPRS class 10, SMS, E-mail
Interfaces	Antennas	GPS : SMB FAKRA, GPRS : SMB FAKRA
	On Board Diagnostic	16 pin universal connector
	Protocols	CAN, KWP, SAEJ1850, SAEJ1939, ISO9141
Power supply	Input Voltage	12 / 24 VDC for automotive (A option) 9 to 60 VDC for industrial (J option)
	Power consumption	Run : 120mA @12V (average) Standby : < 0.1µA
Environmental	Operating Temperature	-40 / +85°C
	Storage Temperature	-55 / +105°C
	Humidity	90% non-condensing
	Dimensions (mm)	112 x 91 x 26
	Weight	270g

MECHANICAL DRAWINGS



SUB-D9 to OBD connector

Status LEDs

Fakra

Figure 1 : Front view



GSM/GPRS Antenna

Main Power

Figure 2 : Rear view



Figure 3 : OBD connector

ORDERING PART NUMBER

The factory standard part number is HEOL-N103-OBD-FF-A

HEOL-N103-OBD-FF-A

GPS and GSM connectors:

- F : SMB Fakra (default)
- A : SMA
- B : SMB
- X : MCX

Input Voltage grade:

- A : 12/24V automotive
- I : 9V- 60V industrial
- B : Autonomous Battery

Fleet Tracking Software

The FTS, installed on a PC, allows you to follow all your N103-OBD tracking modules, wherever in the world:

- works as a server (database) / client application, so users can connect to the software from anywhere
- manages up to several hundreds of N103-OBD modules, that can be divided in different groups,
- shows roads/streets, or Google Earth relief
- automatic detailed reports on each vehicle (mileage, stop time / run time, battery level, OBD data, etc...) in csv or xml format.
- manages destination zones
- other functions are available, also upon request

The screenshot displays the Fleet Tracking Software interface. At the top, there are navigation tabs: "Carte véhicule", "Carte groupe de véhicules", "Rapports détaillés", "Rapports de performance", "Compte", "Utilisateurs", "véhicules", and "Déconnexion". Below these, the "Véhicule:" field is set to "gpsa". The main map area shows a street view of Lannion, France, with several purple location pins. A popup window for vehicle "#20] 5789XW22 : Location" is open, displaying the following information:

- Date: 2009/12/04 17:07:10 [GMT+01:00]
- Vitesse: 0.4 Km/H
- Distance: 2.784 Kms
- Adresse: Rue Saint-Pierre, 22300 Lannion, France

On the right side, there is a "Plage calendaire:" section showing a calendar for December 2009. The current date is 2009/12/04 23:59. Below the calendar, there are buttons for "Mettre à jour", "Dernier point connu", "Auto", and "Rejouer" with a "Popups" checkbox checked. The "Position du curseur:" is shown as 48.754038 / -3.453312. The map includes a scale bar for 5000 feet and a "POWERED BY Google" logo.