



N105-IP68, Miniature GPS/GSM Tracking Module



The autonomous battery operated N105 module has been designed to provide **accurate** and **reliable** tracking information through a GSM network, in very hard environment.

In case of a movement, the N105 sends its GPS position to the GSM network, and you can follow it using Google Earth or **Heol-FTS server software**. It integrates an **accelerometer** and a **real time clock** (to wake up system periodically or in case of a theft).

The high performance **GPS** chipset delivers accurate position information even in poor signal level environments (tree foliage, urban canyons, inside clothes).

The N105 allows you to track objects or persons (data reported: position, speed, internal temperature, battery level). Using the Heol patented standby

technology, the N105 is an ultra-low power embedded tracking and reporting system.

It is moulded in an anti-corrosive resin, enabling long time immersion (IP68).

Characteristics

- Very-high sensitivity of **-165dBm / 66 channels** enabling high performance in low level signals environments.
- **Quad Band GPRS** modem, configured in UDP mode (for use with FTS software). SMS can also be sent to report alarms and status of the module.
- **850mAh Lithium low self-discharge** battery with high autonomy, depending on battery size and periodicity of wake-up and tracking (around 6 hours in permanent tracking, and up to 1 year in standby mode).
- **High efficiency induction** charging system; no connector, no button.
- Fully programmable **standby** mode with less than **1µA** power consumption (patented). Wake up by internal clock, accelerometer, or low battery detection.
- **3D accelerometer** for detection of motion, shocks, vibration.
- Bi-colour status LED.
- **Alert button (magnetic)**.
- Optional buzzer.
- Optional internal clock.
- **Customizable firmware** to fit your requirements.

Compliance

- According to **CE** directive, the HEOL-N105 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-N105 module is RoHS (lead free) compliant.

GPS Receiver	Type	MTK 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)
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, UDP
Power supply	Internal battery	Lithium 850mAh (up to 6Ah, on request)
Environmental	Operating Temperature	-20 / +65°C
	Storage Temperature	-55 / +105°C
	IP rating	IP68 (long time immersion)
	Dimensions (mm)	54 x 38 x 20

Fleet Tracking Software

The FTS, installed on a computer, allows you to follow all your N105 tracking modules, wherever in the world:

- works as a server + database; users can connect to the server from anywhere (from a computer or a mobile phone)
- manages up to several hundreds of N105 modules, that can be divided in different groups,
- shows roads/streets, or Google Earth relief
- daily detailed reports on each vehicle
- manages destination zones
- other functions are available, also upon request

The screenshot shows a web-based fleet tracking 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, a dropdown menu shows 'Véhicule: gpsa' and a timestamp '(Dernière position GPS connue: 2009/12/04 17:16:23 GMT+01:00)'. The main area is a Google Map of Lannion, France, with a red line indicating a vehicle's path and several red location pins. A popup window for pin '#201 5789XW22' displays the following data:

- 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

 To the right of the map is a 'Plage calendaire:' widget for December 2009, showing a calendar grid with the 4th highlighted. Below the calendar are buttons for 'Mettre à jour', 'Dernier point connu', 'Auto', 'Rejouter', and 'Popups'. At the bottom right, it shows 'Position du curseur: 48.754038 / -3.453312'. The map includes a scale bar for 5000 feet and a 'POWERED BY Google' logo.