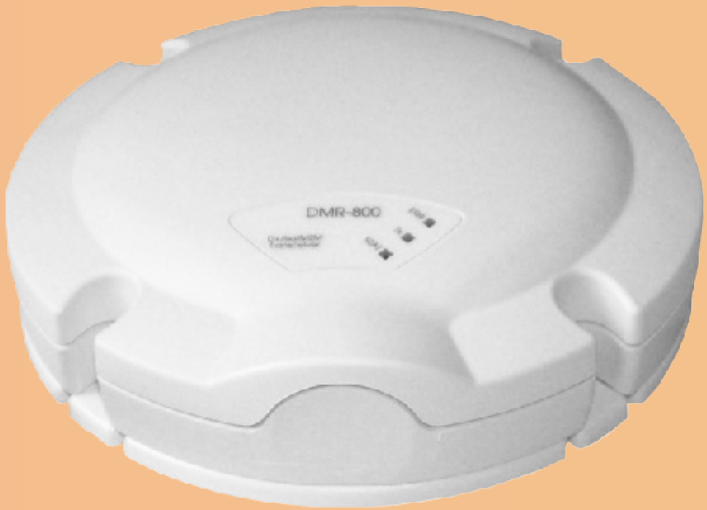


ENAiKOON inmarsat-D

INMARSAT Modem for World Wide Satellite Communication

ENAiKOON inmarsat-D allows the communication between mobile objects and a backend system thru satellite communication.

ENAiKOON Inmarsat-D was especially designed for fleet management purposes of companies, that operate vehicles, ships, containers or other mobile objects either in areas without GSM coverage at all or in areas where it is important to have a combination of GSM and Inmarsat communication. In addition, with Inmarsat-D you can save costs if your vehicles often go cross border which can cause much higher costs in GSM mobile phone networks than normally.

ENAiKOON Inmarsat-D has been designed to work properly with all software and hardware offered by ENAiKOON now and in the future.

ENAiKOON Inmarsat-D is the smallest INMARSAT terminal in the world today.

The Application

GPS, the satellite navigation system, covers all areas of the world without any reasonable exceptions.

GSM mobile phone technology is also available all over the world today. It covers all areas in the world with a significant population.

This means on the other side, that areas with little population are often not covered by a GSM network which means, that in these areas vehicles cannot communicate with their offices using GSM.

Amongst those areas are deserts, the rain forest areas, the sea, Greenland, countries which had wars recently like Iraq, big parts of India, the south eastern Asian region with its recent hyper wave etc.

Companies that want to track vehicles, containers, ships or other mobile objects all over the world need a technology, that works all over the world. Such a technology is INMARSAT.

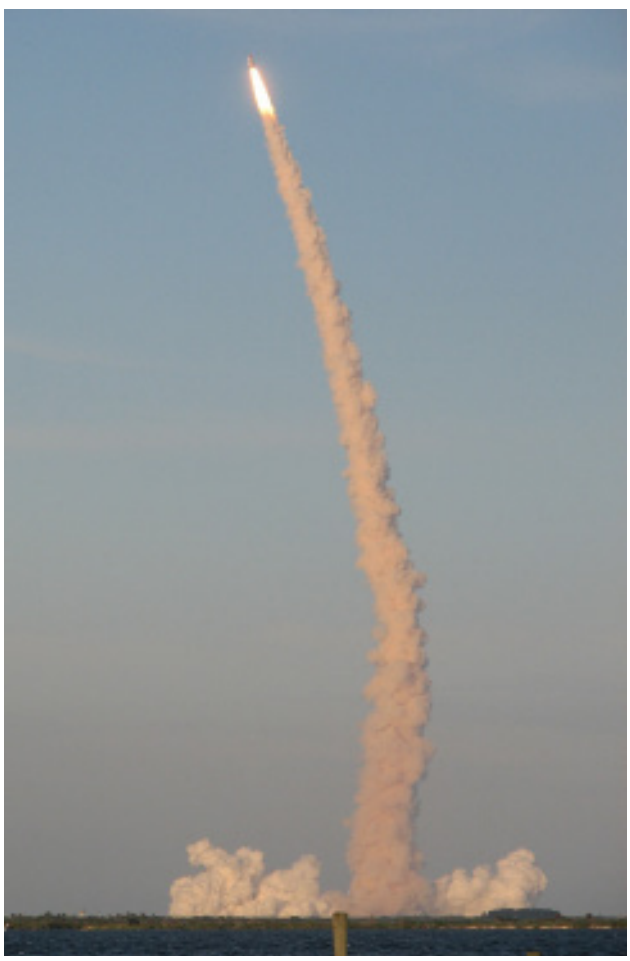
So far, satellite communication has been pretty expensive.
With the new ENAiKOON Inmarsat-D device, the prices for the devices as well as the prices for the communication come down dramatically: The hardware today costs less than 800 € per vehicle, the transmission of an SMS-like message containing the position and many other information of the vehicle (e.g. temperature of the goods, voltage of the car battery, status of the digital inputs, security information etc.) costs with 17 eurocent less than a comparable SMS sent with your mobile phone.

The ENAiKOON Inmarsat-D infrastructure is extremely reliable, because originally INMARSAT was designed as a maritime alarming system to be obligatory on commercial ships all over the world. For the customer this means that position reports, alarms and other messages arrive very reliable in his backend system.

Sample Applications

Surveillance, Remote Control and Positioning from A to Z:

- airships, ambulances, airplanes, animals,…
- ballons, buoys, boats, ...
- construction machines, cars, containers, ...
- dangerous freight, …
- employment vehicles, emergency transportations, ...
- factories, ferries, fishery fleets, ...
- generators, ...
- hot air balloons, halls, houses, helicopters, ...
- industrial plants, ...
- lighthouses, life rafts, ...
- machines, metering stations, motors, ...
- pipelines, piping, police cars, ...
- refrigerators, rescue buoys …
- ships, ...
- trains, trucks, ...
- valuable transports, …
- wagons, wind energy plants, weather stations, ...
- yachts, ...



The Functionality

ENAiKOON inmarsat-D can be installed on any fix mounted or mobile object. The only thing that has to be secured is the power supply and a direct view to one of the eleven INMARSAT satellites which are located in a height of approx. 36,000 km.

The ENAiKOON inmarsat-D unit sends position- and status reports in configurable time frames or on request to one of the satellites in view which in turn sends the information to the INMARSAT ground station which is located in Burum, The Netherlands. The ground station then sends the data on the direct way to the ENAiKOON M2M-commserver.

Any application, that is ENAiKOON M2M-commserver compatible, can load the data from the ENAiKOON M2M-commserver for further use.

The other way round, the data transmission works similar: the ENAiKOON M2M-commserver compatible application sends data to the ENAiKOON M2M-commserver. The ENAiKOON M2M-commserver forwards the data by e-Mail to the ground station in Burum and from there the data is uploaded to the satellite and then downloaded to the ENAiKOON Inmarsat-D device.

Each transmission takes approx. two minutes which means that the acknowledge or answer of a transmission is normally received after four minutes.

ENAiKOON inmarsat-D uses the new INMARSAT D+ service for data transmission. This service allows 10.5 bytes to be sent from the ENAiKOON inmarsat-D unit and 256 bytes to the ENAiKOON inmarsat-D unit.

This volume of data per transmission is big enough to send and receive various information like temperatures, pressures, states of sensors, speed information, directions, heights etc.

In addition, the box can be configured in a way that messages will be sent by the unit if certain events take place like for ex. if the vehicle leaves an allowed area, if a certain speed is reached, if a certain height is reached or a certain state is detected. Text messages can be sent in both directions.

Various accessories are available for ENAiKOON inmarsat-D to mount the unit, to provide the power for the unit or to make additional interfaces, additional computing power etc. available. Constantly additional accessories are under development.

If other suppliers talk about satellite based On Board Units, they typically talk about the Global Positioning System GPS, which allows receiving information from satellites that can be used to calculate the position of a mobile object.

Normally they do not talk about 2-way data transmission thru satellites which is used to transmit positioning information and other information in two ways from and to the mobile object thru satellites.

INMARSAT provides such a 2-way satellite data transmission infrastructure.

With ENAiKOON inmarsat-D you can buy the most cost effective, reliable and secure satellite communication system available today.

Feature List

- Send data thru the INMARSAT D+ service to anywhere in the world an receive data from anywhere in the word
- Ideal for the positioning of mobile objects, for fleet management applications and for SCADA applications
- 1 digital input / 1 digital output (optional: 2/2)
- Today's smallest two-way INMARSAT terminal worldwide: Ø 160 mm (6.23 in), H 52 mm (2.05 in)
- Low power consumption, ideal for battery powered applications
- Integrated 12-channel GPS receiver
- Powerful scripting language
- Wide temperature range: -40 °C to +70 °C (-40 °F to +158 °F)
- Power supply 9 V to 30 V DC
- Maintenance free, very long life cycle
- Easy to install
- Protected against splash water
- Multiple messages are configurable:
  - Vehicle stands or moves
  - Speed is lower or higher than a reference value
  - Change of power supply
  - Mobile object enters or leaves a predefined area
  - Temperature is lower or higher than a reference value
  - Position- and status reports after a configurable time frame or at a given time
  - Change of the status of a digital input or output
  - Height is lower or higher than a reference value
- Transmission of various pre-configured text messages
- Various configurable power saving modes

Several of these functions can be combined or one action can be initiated by another action. There are so many possibilities, that it is not possible to explain them all here.

Products and Prices

Product	Part No.	Product Description	Price
ENAiKOON inmarsat-D	INM-04-02	ENAiKOON inmarsat-D unit with power cable and mounting accessories	790.00 €
ENAiKOON Inmarsat-D magnetic holder	INM-04-03	ENAiKOON inmarsat-D 4 magnetic feet for easy installation of the unit on steel; each foot holds 12 kilograms (154 lb)	98.00 €
ENAiKOON INMARSAT air time	INM-04-07	Activation and initial configuration of the unit in the INMARSAT network	149.00 €
	INM-04-08	Basic INMARSAT fee per month	26.00 €
	INM-04-11	vehicle → back office	0.22 €
	INM-04-12	back office → vehicle	0.40 €
	INM-04-13	alarm message vehicle → back office unit continues to send the alarm until the alarm is cleared	4.50 €

ENAiKOON GmbH
Helmholtzstr. 2–9
10587 Berlin
Germany

Tel.: +49 30 / 39 74 75-30
Fax: +49 30 / 39 74 75-43
info@enaikoon.com
www.enaikoon.com