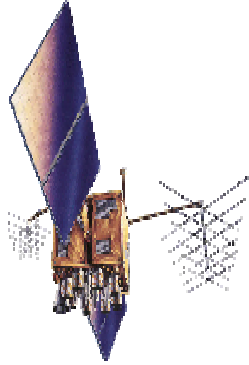




OM Orbcomm monitor



The ORBCOMM Monitor is an intelligent and self contained package with GPS location, bidirectional ORBCOMM satellite link, and a serial interface to other subsystems. This unit is available in different housings for underwater or surface applications, e.g. ORBCOMM SMM, ORBCOMM Surface Beacon, ORBCOMM Drifter etc.

Features:

- Titanium or Delrin housing
- Up to 2 years mooring life
- Up to 6 months transmission life
- Powered by 5, 10, 15 or 20 D-type Lithium batteries
- Uses ORBCOMM satellite communications system
- Panasonic KX-G7101 Communicator
- GPS position determination
- Water depth up to 1000 metres
- Double O-ring seals
- Antennas protected by Delrin dome
- Triggered by satellite contact
- Simple communication by E-mail
- Windows configuration software
- Data acquisition module available

Applications:

- Monitoring of sub surface moorings
- Monitoring of surface moorings
- Location determination of drifters
- Analog and digital data acquisition of surface or subsurface environmental data by the optional ODAM ORBCOMM Data Acquisition Module.

Specification:

	Subsurface	Surface
Housing	Titanium	Delrin
Mooring depth	1000 m	10 m
Dimensions (l x d)	682 x 140 mm	665 x 150 mm
Mass without batteries	12.5 kg	10.0 kg
Displacement	10 dm ³	11.75 dm ³
Power supply	5, 10, 15 or 20 pcs. Lithium D cells	
Mooring life	up to 2 years	
Mooring life in euphotic zone	up to 6 months	
Transmission life	up to 6 months	
Uplink/downlink data rate	2400 / 4800 bps	

THE ORBCOMM SYSTEM

The ORBCOMM system is a wide area, packet switched, two-way data communication system. Communications to and from Subscriber Communicators (SC) to ORBCOMM Gateways are accomplished through a constellation of low-Earth orbit (LEO) Microstar satellites. ORBCOMM Gateways are connected to dial-up circuits, private dedicated lines or networks such as the Internet. The 36 ORBCOMM satellites cover the entire surface of the earth. Position determination is done by Doppler Measurement (accuracy less than 2 km) or GPS (accuracy less than 100 m).

TWO-WAY COMMUNICATION

Besides transmitting messages the beacon is also able to receive commands from the user. With these commands the various timing intervals may be changed and the current position or data from sub systems, e.g. the ODAM module, may be requested.

HOUSING

During development, the long term aspect of mooring was born in mind resulting in the use of titanium for the housing because this material suffers absolutely no corrosion in seawater, even around the sealing areas. Double O-ring seals are used throughout. The beacon has four racks for 5 Lithium or Lithium Thionyl Chloride D cells in each rack. So they may be equipped according to the required mooring and transmission life. A surface version with Delrin housing is available.

SUBSURFACE MONITORING APPLICATION

The OM beacon goes down with the mooring up to 1000 m. Frequently the beacon checks for satellite contact. If the mooring line should break, or when the mooring is being recovered, the beacon will establish communication with the next available satellite. After determination of the position by GPS or Doppler Measurement, the beacon will send a message via the satellite and the ORBCOMM Gateway to the user. While on the surface, additional messages may be sent in user definable intervals. The current position may be also requested by sending a command to the beacon. With hours of sea search time saved, the OM will pay for itself the first time a mooring breaks loose when used for subsurface monitoring application.

TELEMETRY APPLICATION

The OM is provided with a serial link which allows the connection of sub systems like the SiS ORBCOMM Data Acquisition system (ODAM). In this application the OM works as a modem with access to the front end sensors and actuators connected to ODAM. Serial data from the sub system is automatically transmitted via the ORBCOMM system to the user.

MONITOR SOFTWARE

The ORBCOMM Monitor Software (OMS) is a Windows based application which integrates all subsystems to a comfortable turn key solution for receiving environmental data in harsh areas from your desktop via the ORBCOMM satellite system.

REF – OM iss A October 2004