



# Orbcomm satellite communication

Datawell - Oceanographic Instruments

## Buoy data request by e-mail

The addition of an Orbcomm data communicator provides a low-cost two way communication link via satellites enabling buoy use at nearly any global position (restricted in polar areas).

Messages to and from buoy are transferred through e-mail.

The operational modes are normal mode with typical latency < 15 min or globalgram mode with typical latency 1 - 2 hours depending on global position. Transmission intervals can be initiated by a timer and an Hs-limit overflow. Interval time and Hs-limit are remote programmable. The minimum time interval is 30 minutes.

Multiple message types for data and status are selectable.

Single messages may also be requested while the periodical transfer scheme is continued.

Average power consumption is low by way of an intelligent power control algorithm.

The Orbcomm option is available for Directional Waverider buoys.

## Highlights of the Orbcomm option

- buoy use almost independent of global position
- no local receiving station required
- independent from local suitability to maintain a reliable radio link
- communication to and from any PC through e-mail
- two-way communication enabling programmable data transfer or upon demand
- low power consumption
- retrofitting to existing Directional Waveriders just by exchange of hatchcover
- software is available for filtering and saving of Orbcomm e-mail attachment files to W@ves21 compatible formats



Orbcomm antenna



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## Specifications

|          |   |                                |
|----------|---|--------------------------------|
| Messages | Compressed wave spectrum, battery condition and status                | 56 bytes                       |
|          | Full wave spectrum, battery condition, GPS position and status        | 561 bytes (not in g.gram mode) |
|          | System file (Rmsh, peak power density, GPS position)                  | 49 bytes                       |
|          | Full status message (mode + system status + Doppler position)         | 25 bytes                       |
|          | Mode report   | 6 bytes                        |
|          | Doppler position report   | 6 bytes                        |
|          | System status report (on-time, orbits found, satellites in view, etc) | 6 bytes                        |
| Power    | Sleep mode  | ca 30 mW                       |
|          | Receiver active   | ca 750 mW                      |
|          | Minimum (normal mode < 500 bytes per day)                             | 100 mW                         |
|          | Typical (normal mode ca 1000 bytes per day or globalgram mode)        | 150 mW                         |
|          | Maximum (normal mode >5000 bytes per day)                             | 250 mW                         |

