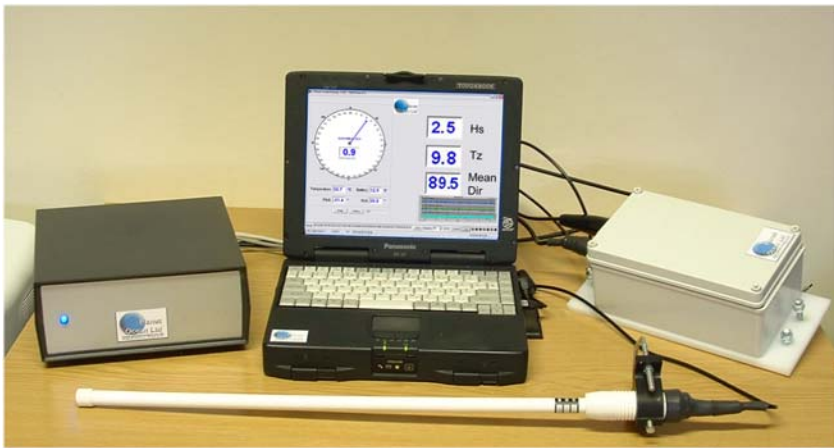




Planet
Ocean Ltd



DBT-1 DBT-2 DATA BUOY TELEMETRY SYSTEMS



The DBT range of telemetry systems are designed to facilitate simple implementation of radio telemetry on data buoy platforms or other remote locations. Systems are available using UHF or VHF, But alternatives using IRRIDIUM, or GSM (cell phone) technology are available.

A key feature of the system is the open nature of its architecture. Almost any instrument with a serial data output can be connected to the input of the telemetry system, and its data are presented at the receiver in a reliable and transparent way. In particular ADCP's acoustic wave

profilers, acoustic modems, CTD systems etc have been accommodated. The electronics contained within the remote (transmitter) unit takes care of radio modem management, power supply control and battery charging, and error checking. Systems are also available with analogue and digital inputs, and almost any combination can be catered for upon request. The systems are designed to be rugged and water tight for deployment in extreme environments such as ocean data buoys and are extremely low power.

Two buoy packages are available. DBT-1 is provided in an immersion proof enclosure for open deck mounting. The system is totally self contained including batteries. DBT-2, is provided in an IP-68 enclosure, also suitable for deck mounting, but preferably within an equipment bay, and uses external batteries. Both systems use oceanographic connectors.



The buoy mounted DBT-1 system shown (right), is housed within an immersion proof ABS pressure case, Whilst the DBT-2 (left) uses external batteries (shown here on a stainless steel support chassis). Both are fitted with oceanographic connectors and incorporate; solar charge regulator, radio buffer and controller and UHF/VHF radio modem. The base station (above) is generally configured as a mast head mounted receiver unit in water tight enclosure with RS-485 data output, antenna (various configurations available depending upon range etc) up to 1000m data and power cable, and a desktop power supply and RS-485 decoder. The RS-232 data output is available for direct connection to a PC or onward transmission system. Software, solar panels larger input buffers are all available on request. In buoy to base applications where power is generally limited, the remote system has it's radio modem powered off in normal conditions, and will



wake up under "sensor" control, therefore the systems are normally simplex, although half duplex systems are available power supply allowing. Radio systems incorporate full forward error checking and correction, and can be addressable to allow for multi node networks. Repeater systems are also available to extend range if required. Systems can be provided with optional BUOYTRACKER location and monitoring system.

DBT-1 DBT 2 iss B Oct 2005

General Specifications:

Buoy pod:

Radio Standard	EN 300 113-1
EMC Standard	EN 301 489-1, -5
Electrical Safety Standard	IEC 60950
Frequency Range	400 – 470 MHz (other frequencies available)
Channel Spacing	25 kHz
Frequency Stability	< ± 1.5 kHz
Carrier Power	10 mW ... 1W, software adjustable
Data Speed of Radio Interface	19200 bps
Data Speed of Serial Interface	300 ... 9600 bps
Serial Interface	RS-232
Power supply	12v solar panel, power dependant upon location
Internal batteries	12v 24AH typ.
Standing current	0.006 A
Operating Temperature Range	-25 °C ... +55 °C
Antenna	0dB omni (standard) 6dB omni optional.
Environmental	IP68 (10m immersion).

- Automatic store-and-forward repeater function
- All parameters configurable by software
- Limited set of parameters configurable on-line by data commands
- Forward error correction
- Software update by flash-programming
- Addressing system and configurable Tx delay

Base station:

Radio Standard	EN 300 113-1
EMC Standard	EN 301 489-1, -5
Electrical Safety Standard	IEC 60950
Frequency Range	400 – 470 MHz (other frequencies available)
Channel Spacing	25 kHz
Frequency Stability	< ± 1.5 kHz
Receiver Sensitivity	-115 ... -110 dBm (BER < 10E-3) ; 0.22 µV (12 dB SINAD)
Carrier Power	10 mW ... 1W, software adjustable
Data Speed of Radio Interface	19200 bps (25 kHz ch. sp.)
Data Speed of Serial Interface	300 ... 9600 bps
Serial Interface	RS-232, RS-485
Operating Voltage	110/240 VAC 50 – 60 Hz
Operating Temperature Range	0 °C ... +55 °C office unit, -25 °C ... +55 °C mast head unit.
Data/power cable	25m typ 500m max.
Antenna	0db omni, 6db omni or 12 element beam.
Environmental	IP67 mast head receiver, IP 55 desktop unit.

