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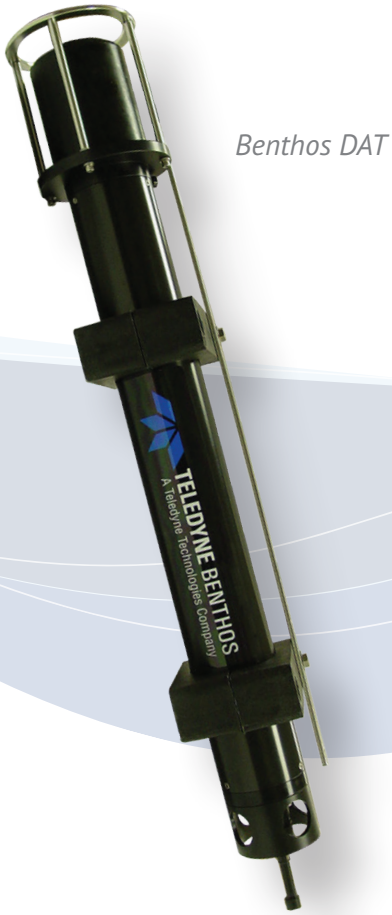
Benthos DAT

Directional Acoustic Transponder (DAT)

All-In-One: Range, Bearing, and Data Communication

The Benthos DAT (Directional Acoustic Transponder) is an extension to the Teledyne Benthos ATM-900 Series modem which automatically estimates the azimuthal and vertical arrival angles of a message sent by a remote modem or acoustic pinger. The system is a "modified" ultra-short baseline (USBL) which uses a broadband component of a typical modem message to form estimates of arrival angle(s). While conventional USBL devices employ tonal signals, the appropriate processing of wide band signals provides far better combined range and arrival angle estimation, especially at low Signal to Noise Ratio (SNR). The device offers a clear 360 degree field of view in azimuth, and an approximate vertical coverage spanning + 90° overhead to -50° below horizontal. Optionally, the DAT can be operated in a passive pinger receiver mode for locating acoustic sound sources including Black Box pingers.

The DAT's compact size and low power consumption make it appropriate for both surface and subsurface platforms. Acoustic modem, USBL, and pinger locator functionality can now be integrated on Autonomous Underwater Vehicles in one system. Mounting the DAT on an AUV, as an inverted USBL system, can provide navigational accuracy unsurpassed by other systems.



Benthos DAT

PRODUCT FEATURES

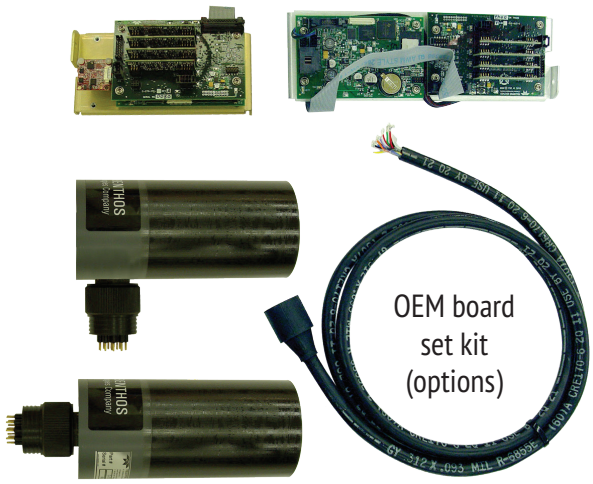
- Acoustic Modem and USBL Functionality in One Package
- Compact Form Factor
- Lower Power Consumption
- Multiple frequency options (LF, MF, and Band-C)
- Available either in a pressure housing or as an OEM board set with matching transducer

TELEDYNE MARINE
BENTHOS
Everywhereyoulook™

Benthos DAT Directional Acoustic Transponder (DAT)

TECHNICAL SPECIFICATIONS

	ACOUSTIC MODEM
Data Rate	140 - 15,360 bps
Data Storage	6MB datalogger standard
Processing	Data redundancy, 1/2 rate convolutional coding multipath guard period selection MFSK and PSK modulation schemes
Distances/Range	2 - 6 km common, greater distances possible 20+ km available using repeater functionality
Frequencies	Low frequency (LF) 9-14 kHz Mid frequency (MF) 16-21 kHz Band C 22 – 27 kHz
Transducer	Transmit omni-directional (Toroidal pattern) Remote transducer head options available. Call for details.
Connection	MBH-16-MP connector on unit, 9 pin RS-232 cable included Port 1 RS-232, Port 2 RS-232, power, ground, spare (1 PPS option)
	USBL
Beamwidth	Receive – azimuth 360 degrees, vertical +/- 50 degrees
Accuracy	Range, 0.3 meters Angle,+/- 0.3 degrees RMS
	OEM KITS
Kit Supplied with	PCB on chassis (long/short option) Remote transducer (straight/right angle option) Interface pigtail
	INTEGRATED DAT
Depth	500m, 2000m, and 6000m housing options are available
Size	5.5 in (14 cm) diameter x 33.9 in (86 cm) length (dimensional drawing available)
Weight	26 lbs (11 kg) dry, 12 lbs (5 kg) wet
Power	300 W•Hr internal batteries (can also be powered by external source)





BENTHOS DAT:
Integrated unit (shown)

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