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DTS-500, Deep Tow Sub-Bottom Profiler

Key Features

- Operation over 2000m single industry standard coaxial tow cable.
- 500m water depth operation.
- High resolution sub-bottom data, up to 15cm.
- Programmable power level, trigger rate and record length.
- Vertical motion compensation and integral AHRS sensor.
- Long life, durable sparker electrodes
- Integral hydrophone receiver with programmable pre-amp gain.
- Full system safety and operational safety interlocks.

Applications

- High and Ultra-High Resolution geophysical surveys.

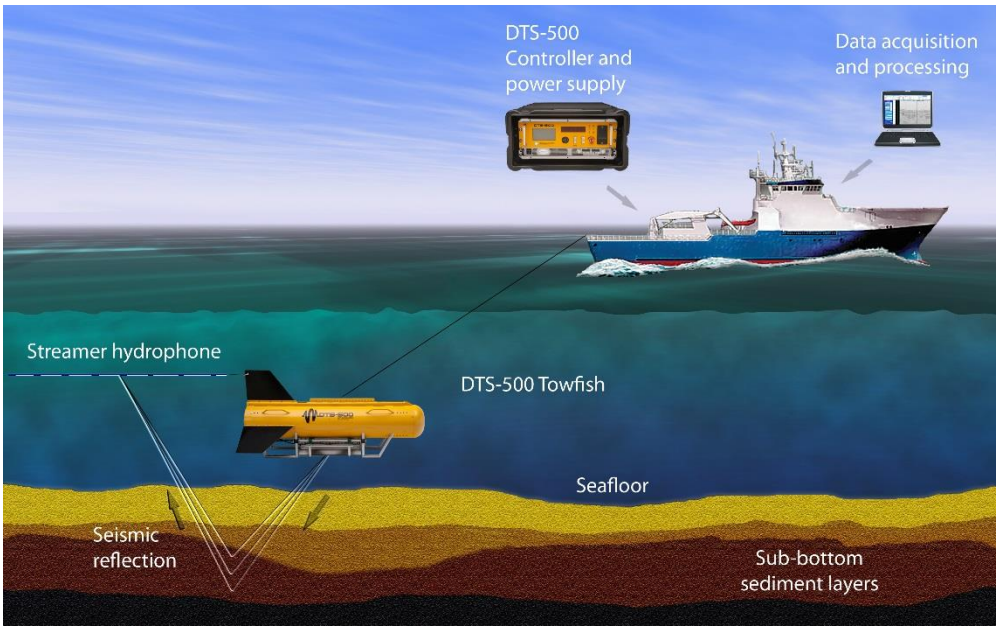
DTS-500, System Overview

The DTS-500 is a deep tow high resolution sub-bottom profiler, designed to operate with industry standard coaxial tow cables up to 2000m. The DC power, communications and analogue seismic data are multiplexed to the surface console. The wide dynamic range of the link, coupled with the high frequency sound source, provide high resolution sub-bottom data which can be easily interfaced to industry standard data loggers. The system is controlled and monitored using the onboard Surface Console and can be triggered externally or run internally. The Surface Console has an integrated LCD display, indicators and a tow cable leakage monitor for online QC and safety.

The DTS Towfish is a solid state instrument with a 500 Joule per second charge rate which allows a typical repetition rate of 150 Joule at 3Hz. Utilising the integrated high resolution depth sensor, the system compensates for the vertical movement of the Towfish. Its orientation is monitored using the internal AHRS sensor. The DTS-500 has a number of electrical and mechanical interlock systems designed to provide operational safety together with system safety.

The DTS-500 system utilises reverse polarity providing long life sparker tips. This minimises operational downtime maintenance and significantly increases sound pulse repeatability.

Technical Specification



PHYSICAL

DTS-500 Towfish		
Dimensions	1500mm (L) 700mm (H) 800mm (W)	
Weight	146kg	
Depth Rating	500m	
Tow Point	19mm opening // 2 Pin tow arm	
DTS-500 Console		
Dimensions	Transit case (4U):	29cm (H) x 56cm (W) x 56 (D)
	Console:	3URack
	Power supply:	1U Rack

ELECTRICAL

System Vac Supply	1500 Watt, 240Vac 7A // 120Vac 14A. Auto Detect 50 // 60Hz
Tow Cable	# A302799 14AWG centre coaxial double armour (recommended) # A301241 10AWG centre coaxial double armour tow cable # A304874 20AWG centre coaxial double armour tow cable (minimum) *(Other cables may be compatible – contact AAE)*
Max Length	2000m with 14AWG >2000m with 10AWG #A301241

OPERATIONAL

Voltage	70Vdc Program // 360 to 450Vdc Operational
Current	1.8A Peak
Power Levels	50,100,150,200,250,300Joule 500 Joule per second charge rate
Sound Output	218dB re 1µPa at 1m 150J (Typical)
Number of Tips	40
Resolution	15 to 25cm depending on power
Hydrophone	Acceleration cancelling 8 element array

DTS-500 Technical Specification continued…

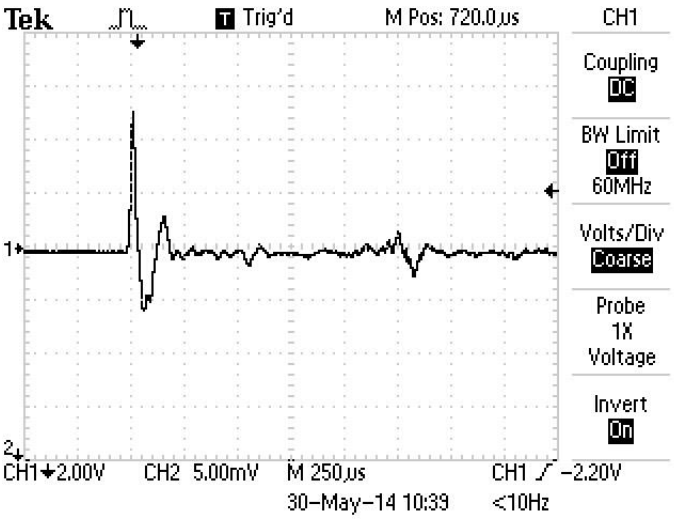
Pre Amp	Programmable -13dB, 0dB, +13dB, +25dB, +36dB
TVG	Programmable -30 dB to +10dB in 1dB steps
Record Length	Max = firing rate -25ms, default or programmable
Trigger	Internal or external
Data Output	Analogue ±5Vdc
Bandwidth	100Hz to 10kHz
Safety Interlocks	Isolated tow cable electrical leakage sensor Immersion sensor Water ingress sensor Thermal sensors Cable and housing sensors Depth sensor minimum limit Communications and system monitoring
Tow Fish Orientation	0.1° Pitch, roll, heading resolution
Positioning	Integrated 1010 Beacon and RM45/RM90 Transducer
Communications	4 x RS232 Serial port

COMPATIBILITY

Analogue Sub-bottom data loggers; Triton, Chesapeake. Coda etc

TYPICAL PULSE SIGNATURE

150J recorded at 1m



APPLIED ACOUSTICS
Underwater Technology

Due to continual product improvement, specification information may be subject to change without notice.
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