



# Deep Tow 2000

## Combined Seabed Survey System

### Specifications

#### Telemetry System

Power Requirements:	90-250 VAC, 50-60Hz, 500 W
Power output to tow vehicle:	350 VDC $\pm$ 3 VDC
Telemetry Frequencies:	220-236 kHz (up) 430-446 kHz (down)
Max cable length:	10 km of 11 mm diameter armoured coaxial cable.
Cable:	Rochester A302799 or equivalent.
Telemetry:	High tolerance to cable attenuation and leakage. Greater reach and far more robust than competing digital links.
Safety features:	Shutdown if greater than 2 mA leakage between screen and armour Safety interlock.

#### Telemetry Interfaces

Side Scan Sonar:	DC power and signal/trigger interface.
GeoChirp II:	DC power and signal/trigger interface.
Motion Sensors:	Depth, heading, pitch, roll.
Magnetometer:	Isolated 32 VDC PSU and RS232.
Posidonia USBL:	Isolated PSU, RS232 and trigger.

#### GeoChirp II

Max power output:	2 kW RMS max at 95% efficiency.
Max power input:	250 W average at full rep rate.
Pulse width:	16 or 32 ms (programmable).
Chirp Sweep:	Programmable (up/down non-linear etc).
Penetration:	up to 50 m, sediment dependent.
Frequency range:	1 kHz to 12 kHz.
Control:	RS232 menu driven.
Rep rate:	8 per sec at 16 ms pulse width. 4 per sec at 32 ms pulse width.
Cable type:	Single coax operation (A302799).
Towfish:	Standard GeoAcoustics 136 fish.
Transmit transducers:	4 off 137C (600 m) or 138D (2000 m).
Hydrophone:	Standard chirp hydrophone tail.

#### Receiver

Dynamic range:	Gain: adjustable over 60dB range. TVG: -20 to +20dB maximum. AGC: -34dB maximum.
Output:	Selectable signal envelope or amplitude modulated 12kHz.
Key out:	0.6ms CMOS/TTL compatible.
Modes:	100kHz and 500kHz operation. Raw signal and processed signal.

#### Surface Equipment General

Temperature:	Storage: -20 to 75°C Operating: 0 to 50°C
Humidity:	10% to 95% RH, non-condensing.
Mounting:	All units are suitable for either bench or rack mounting.

#### Transmitter

Frequency:	110/410kHz $\pm$ 1%.
Power output:	3.0 kW/2.5 kW pulse $\pm$ 20%.
Pulse Length:	167 $\mu$ sec/88 $\mu$ sec $\pm$ 1%.
Pulse repetition rate:	20 pulses per second maximum.
Protection:	Open and short circuit protected.
Efficiency:	Greater than 80%.

#### Side Scan Sonar

Power requirements:	110/240 VAC switchable, 50-60Hz, 50W.
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#### Towfish Attitude Package

Heading Accuracy:	$\pm$ 0.5°
Heading Resolution:	0.1°
Pitch Accuracy:	$\pm$ 0.2°
Pitch Resolution:	0.1°
Roll Accuracy:	$\pm$ 0.2°
Roll Resolution:	0.1°
Depth Accuracy:	$\pm$ 1% of full scale or $\pm$ 2m
Depth Resolution:	0.1 m

#### GeoPro 4 Sonar Processor

Power:	115 - 240VAC, 50/60Hz, 200W
Monitor support:	17" monitor.
Recording:	2GB JAZ drive also accept any SCSI compatible storage device.
Networking:	Ethernet support built in.
Analogue inputs:	$\pm$ 100 mV full scale to $\pm$ 10V full scale.
Channel:	4 input channels.
Triggers:	2 asynchronous triggers.
Digital inputs:	RS232/RS422 NMEA input (navigation data input).
Duration time:	20ms - 16sec in 1 ms increments.
Filtering:	High pass, band pass, low pass.
Navigation:	Logs NMEA position, heading and speed with each trigger event.
Quantization:	12 bit.
Sampling rate:	40 $\mu$ s - 500 $\mu$ s in 20 $\mu$ s increments (2kHz - 25 kHz).
Side scan range:	10m - 12.5km per side (total swath is twice this).
Triggering:	TTL.

#### Towfish General

Weight:	265kg
Length:	1.4m
Height:	0.45m
Width:	0.45m

Specification subject to change without notice  
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