GEOPULSE COMPACT

KONGSBERG

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DIGITAL SUB-BOTTOM PROFILER WITH SUPERIOR PERFORMANCE, LOW POWER REQUIREMENTS AND VERSATILE DEPLOYMENT OPTIONS

GeoPulse Compact OTS is a high performance digital sub-bottom profiler. Depending upon the survey task the user can choose waveforms in the frequency band of 2-18kHz, thus optimising resolution and subseafloor penetration. This version is designed for portable mounts on vessels of opportunity.

Technology

GeoPulse Compact is a technically advanced sub-bottom profiling system. Its digital processing and waveform selection technology enables the appropriate pulse-shape, power signature and configuration to be selected for the job in hand, whether it's mapping the geology in deep oceans or determining mud thickness in a silted harbour. The new GeoPulse Compact system combines the best features of continuous wave (Pinger) type systems and frequency modulated pulses in a unit which requires only 11% of the power requirements of previous systems. The system utilities very low noise, state of the art, ADC and amplifier technology. Massive oversampling of the raw signals (800kHz), combined with advanced FPGA based decimation and processing allows the receivers to achieve over 100dB of noise free dynamic range.

System Components

The system is operated directly from a computer using the supplied GP1000 software, which interfaces to the deck unit via Ethernet. The sonar electronics are mounted close to the transducers in all deployment options and the signal is transmitted to the deck unit via a lossless digital connection. Data is acquired with the transmit transducer and with a fixed hydrophone, allowing the operator to use the best signal for the job at hand.

Deck Unit

The Deck Unit receives serial inputs from GNSS as well as a PPS input. The deck unit interfaces to the towfish through a soft tow cable. Power is supplied by a 10-30V dc connection allowing the system to be operated from battery power on small vessels.

Sub-Sea Electronics

The waterproof electronics module is manufactured in aluminium and is rated to 1000 metres water depth. Its internal electronics generate and transmit the waveforms selected by the user. The return signals are received either from the integrated hydrophone or from the transducer and are instantly digitised prior to being routed to the Deck Unit via an ADSL link.

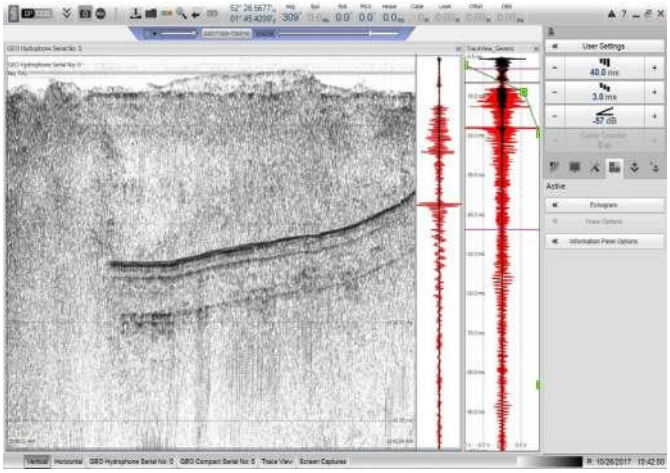
Transducers and Hydrophone

The transducer is a double resonant stack design which operates efficiently over a wide frequency band of 2 - 18 kHz and has a flat response over the range 5-18 kHz.

The integrated single channel hydrophone utilises 7 high-spec elements to capture the return signal and route it via an inline preamp to the subsea electronics where it is digitised.

Performance

- 2 - 18 kHz Sub-Bottom profiler
- Versatile towed or over-the-side mount
- Resolution 6cm source sweep dependant



TECHNICAL SPECIFICATIONS

GeoPulse Compact	
Power requirements	10-30V DC 30W
Size (Deck Unit)	350mm(L) x 268mm(D(Excluding connectors)) x 103mm(H)
Weight (Deck Unit)	7 kg
IP rating	IP66
Temperature	Storage: -20 to 75°C. Operating: -5 to 50°C.
Humidity	10% to 95% RH, non-condensing.
Connectors	3 x Serial, Power in, Deck cable to system / cable winch, PPS, External trigger
Frequency Range	2 to 18 kHz programmable
Power Output	User programmable
Source Level	up to 196dB ±3dB re 1uPa@1m
Programmable source signatures	Pinger: Any frequency can be selected between 2KHz – 18KHz in 0.1Khz. Any number of cycles between 1 – 32 can be selected for any of the frequencies above. Ricker: Any frequency can be selected between 2KHz – 18KHz in 0.1Khz steps. Any number of cycles between 1 – 32 can be selected for any of the frequencies above. Chirp: There at over 10 Chirp waveforms available at sweeps of 5Hz, 10kHz and 15kHz. So a chirp sweeps of 2kHz – 7kHz, 2kHz – 12kHz and 2kHz – 17kHz can be selected for example.
Weight (towfish)	32 kg
Dimensions (towfish)	1000 mm (L) x 540 mm (W) x 390 mm (H)
Penetration (Up to)	30m (Sand), 80m (soft clay)

Specifications subject to change without any further notice.

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