



HIGH RESOLUTION SIDE SCAN SONAR

PuSAR acquires high resolution acoustic images of the seabed by using a rugged tow fish that can be easily operated with a water protected deck unit and small cable hand reel. Large areas can be surveyed efficiently revealing small objects and structures in great detail. The system is ideal for search and recovery operations, underwater inspection as well as engineering and scientific surveys.

The system operates in a frequency range of 550 kHz to 1 MHz. Within this bandwidth source signals, both FM and CW, can be selected in order to optimise the range and resolution for the given survey task.

The set-up comprises a compact stainless steel towfish, which is towed from a 100 m long soft tow cable. The cable can be paid out from a compact hand reel, which uses slip rings so that it stays connected to the deck unit via a dedicated deck cable during operation. Optionally various soft tow and armoured cables, up to 300 m length, are available. The deck unit has been designed for use on small vessels like open RIBs and is therefore water protected (IP64) and can be battery or mains powered, 24 VDC or 110/230 VAC respectively. It has an integrated GPS system that provides positioning information with SBAS differential corrections. Alternatively an external positioning system can be connected via a serial port.

The system is delivered with a dedicated software package to be run on a customer laptop computer connected via Ethernet to the deck unit. It allows the user to plan and conduct the survey and acquire sonar data with embedded positioning information.

The data can be processed, visualised and interpreted in the software package and exported in industry standard formats to third party packages for further use.

The system is designed for easy deployment and intuitive operation. It can be operated by non-specialised personnel for quickly carrying out effective surveys using vessels of opportunity in search and recovery (SAR) missions. Underwater inspection and engineering surveys can also easily be conducted without large overheads for survey platforms and survey specialists.

The high resolution achievable with the system results in seafloor maps with detail, which may form the basis for scientific investigation in areas such as marine geology and geophysics as well as marine archaeology.

FEATURES

- Easy deployment and operation
- Portable and rugged towfish
- Compact and water protected deck unit (IP64)
- Frequency 550 kHz - 1000 kHz
- Wide bandwidth FM and CW pulses
- Integrated GPS module (SBAS corrections)
- Tow cable
- Hand reel and deck cable (optional)
- Acquisition and processing software

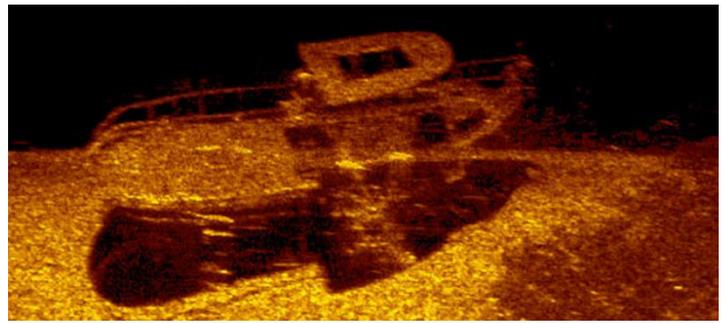


Image: 20 m range 1 MHz– Stoney Cove, UK

TECHNICAL SPECIFICATIONS

<p>Performance</p> <ul style="list-style-type: none">• Max range (per side)• 550 kHz - 100 m CW• 550 kHz - 150 m FM <p>Beam pattern (typical)</p> <ul style="list-style-type: none">• 50° x 0.5° - 0.4° <p>Pulse repetition rate</p> <ul style="list-style-type: none">• 25 pulses at 30 m range• 5 pulses at 300 m range <p>Pulse length</p> <ul style="list-style-type: none">• Automatic <p>Max resolution (across track)</p> <ul style="list-style-type: none">• 10mm <p>Max resolution (along track)</p> <ul style="list-style-type: none">• 0.07 m at 10 m range• 0.35 m at 50 m range• 0.69 m at 100 m range <p>Deck Unit</p> <ul style="list-style-type: none">• Power requirements• 10-30 VDC 43 W max• 110/230 VAC, 50-60 Hz, 50 W max• Dimensions: 30 cm W x 20 cm D x 8.5 cm H.• Weight: 5 kg• Temperature: storage: -20 to 70°C, operating: 0 to 40°C• Humidity: 10% to 90% RH, non-condensing	<p>Connections</p> <ul style="list-style-type: none">• Power input• AC and DC• Tow cable connector• USB• Ethernet• GPS <p>Laptop available for interfacing to system</p> <p>Tow fish</p> <ul style="list-style-type: none">• Stainless steel body with shear release carry handle/tow point• Plastic nose cone• Dimensions: 9 cm D x 110 cm L, 3 fins on tail protrude 7.5cm• Tow speed: 1 to 12 knots• Weight: 16.5 kg• Transducers• Composite technology.• Source level: 223 ± 3 dB re 1 µPa @ 1m• Sensitivity: -190 dB re 1V/µPa• Depression angle: 0°, mounting angle 30°
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Specifications subject to change without notice. E&OE