

Ranger

Embedded
Synthetic Aperture Sonar

Marine Sonic Technology



Sea Scan[®] Ranger

Compact & Lightweight | High ACR | Low Power

The Sea Scan Ranger is a Synthetic Aperture Sonar specifically designed for small Autonomous Underwater Vehicles (AUVs). Ranger delivers high resolution, ranges, and increased area coverage rates (ACR) at an affordable price. The innovative design make it the smallest SAS in the market while consuming less than half the power of conventional SAS systems. The Sea Scan Ranger provides a constant 5 cm x 5cm resolution at ranges of 150 meters per side. This makes it the ideal sonar for applications that require ultra-high resolution imagery for detecting very small targets in the first survey pass without sacrificing ACR. The modular design of the Ranger provides both offline and online processing options with ultra-low power consumption and reduces the mechanical footprint needed for system integration.



The system electronics will easily integrate into all small AUV platforms currently on the market and is also available in a watertight pressure case configuration. The Sea Scan Ranger supports various navigation sensors and offers internal as well as external data storage. Ranger comes with ruggedized transducers custom-designed and built to fit your vehicle to reduce your time and effort to integrate the sonar payload. This gets your vehicle in the water faster.

Applications

- Small Object Detection
- Hydrographic / Geophysical Survey
- Civil Infrastructure Inspection
- Terrain Mapping & Obstruction Surveys
- Offshore Infrastructure Inspection
- Cable and Pipeline Surveys
- Archaeological & Biological Surveys
- Mine Countermeasures (MCM)
- Intelligence, Surveillance, and Reconnaissance (ISR)

Key Features

- Optimized for small and mid-size AUVs
- 300m Swath
- Compact, Lightweight, and Low Power Consumption
- Excellent Cost-to-Performance Value
- Customized Transducers Tailored To Your Vehicle
- 300m Depth Rating
- Variable & Modular Design
- Low Integration Costs
- Internal Memory Storage



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Sea Scan[®] Ranger

High Resolution | Long Range | Great Customer Service

Mechanical Specifications

Transducer Dimensions	Length 94.5 cm / 37.2 in x Width 7.0 cm / 2.8 in x Height 4.5 cm / 1.8 in
Transducer Weight	4100 g / 9.039 lbs in air (per unit) 1700 g / 3.747 lbs in water (per unit)
Electronics Dimensions	Length 12.7 cm / 5.0 in x Width 5.9 cm / 2.3 in x Height 2.6 cm / 1.0 in
Electronics Weight	195 g / 0.43 lbs in air
Depth Rating	300 m / 985 ft

Power Consumption

Input Voltage (12 – 30 V DC)	Active Mode	Sleep Mode
Offline Processing	30 W	0.1 W
Online Processing	40 W	0.1 W

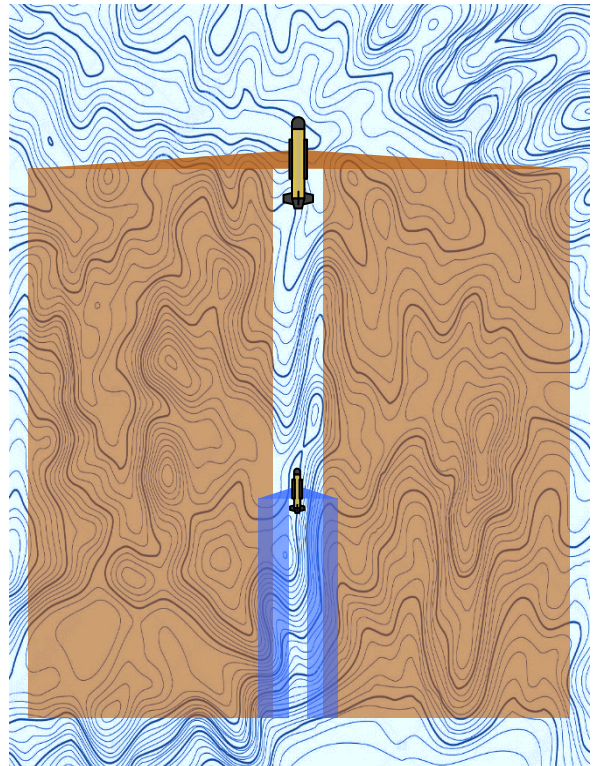
Interface Specifications

Control	10/100 Ethernet, Isolated RS-232 Serial, TTL Sync-In, TTL Sync-Out
Data Storage	External via Ethernet 500 GB Internal Storage
File Format	SDX
AUX Data Input	Latitude, Longitude, SOG, COG, Heading, Depth, Altitude, Roll, Pitch, SOS in NMEA - 0183

Acoustic Specifications

SAS Resolution	5.0 cm
Range	150 m / 492 ft
Frequency	300 kHz
Source Level	207 dB re 1uPa @ 1m
Transmit Pulse Technology	Marine Sonic Technology Adaptive™ CHIRP
Transmit Pulse Bandwidth	40 kHz
Transmit Pulse Length	< 0.5 msec
Data Collection Speed	2 – 5 kts

Like all Marine Sonic Technology products, the Ranger comes with the user-friendly and self-explanatory Sea Scan Survey acquisition and review software. Alternately, we offer a Software Development Kit (SDK) which allows UUV manufacturers and third party software developers the ability to control the sonar directly, as well as display data.



The above image shows Ranger's swath width at 5 cm constant resolution compared to a conventional side scan sonar at 5 cm resolution.

We Pride ourselves on our Customer Support.

- Free 24hr Tech Support
- Free Software Upgrades
- 3-year limited warranty

ATLAS NORTH AMERICA LLC
120 Newsome Drive, Suite H
P.O. Box 1309
Yorktown, VA 23629 | United States

Phone: +1.757.463.0670
Telefax: +1.757.463.0673
info@na-atlas.com
www.marinesonic.com

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