Shark-S455ME Embedded Multi-Beam Side Scan Sonar

www.lcsonar.com

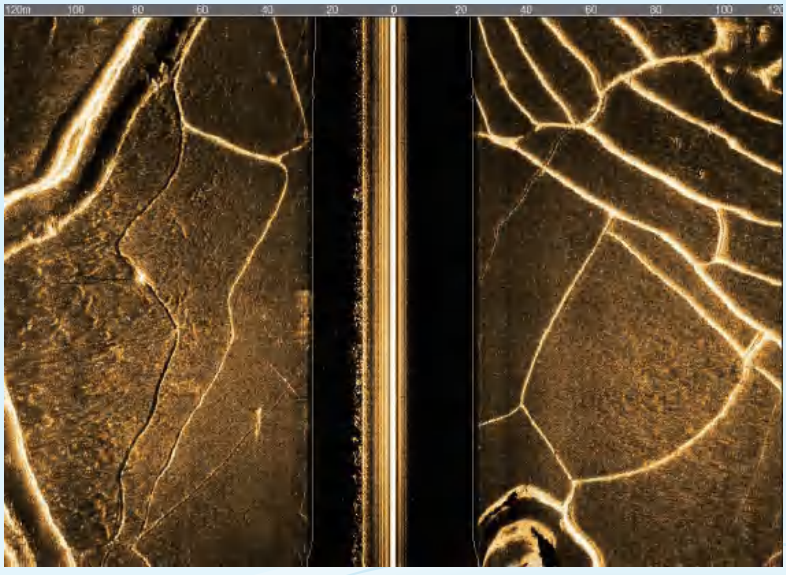
The Shark-S455M Embedded Multi-beam Side Scan Sonar is specifically designed for USVs (Unmanned Surface Vehicles), ROVs (Remotely Operated Vehicles), AUVs (Autonomous Underwater Vehicles), UUVs (Unmanned Underwater Vehicles), and other embedded platforms. The system ' s towfish incorporates five beams per side, ensuring high-speed operation and high-resolution imaging. It features an advanced dynamic digital focusing algorithm that significantly enhances along-track resolution at mid-range and near-range distances. The ability to scan at high speed greatly improves survey efficiency. Additionally, the system supports a low-speed, dual-frequency scanning mode that can be switched in real time, achieving an optimal combination of high resolution and long-range coverage.

The system consists of two transducer arrays, an electronic unit, and OTech ' s proprietary sonar software. The electronic unit comes in two versions: a built-in non-sealed type and an external sealed type. Designed for ultra-low power consumption, the system operates on a DC supply of 18 – 36V.

The proprietary OTech software includes features such as real-time image mosaicking, sonar image display, survey line planning and navigation, track tracking and coverage display, data recording and playback, target management and export, and multi-window sensor information display. The sonar image adaptive equalization technology ensures consistent display quality for both near and far images. The software ' s basic parameters can be controlled remotely. It can output raw data in real time for AI-based automatic target recognition development, while simultaneously saving data in XTF format for processing with third-party software. SDK support is available for secondary development.

Features

- Dynamic digital focusing algorithm, which significantly enhances resolution
- 5 beams per side (10 total), delivering high-resolution imaging at speeds up to 10 knots
- Command-based remote control of operations and parameter settings
- Real-time raw data logging and output for auto target recognition development
- OTech's multifunctional software offers free periodic upgrades and updates.
- Full-coverage real-time mosaicking and imaging with SDK support.



Applications

- Military applications, mine hunting, and small target surveying
- Search and rescue, drowning rescue, and salvage operations
- Marine geology and geophysical exploration and classification
- Archaeological surveys, underwater ancient city and shipwreck searches
- Cable and pipeline laying, as well as route inspection and maintenance
- Seafloor surveying and exploration for offshore wind and other renewable energy projects

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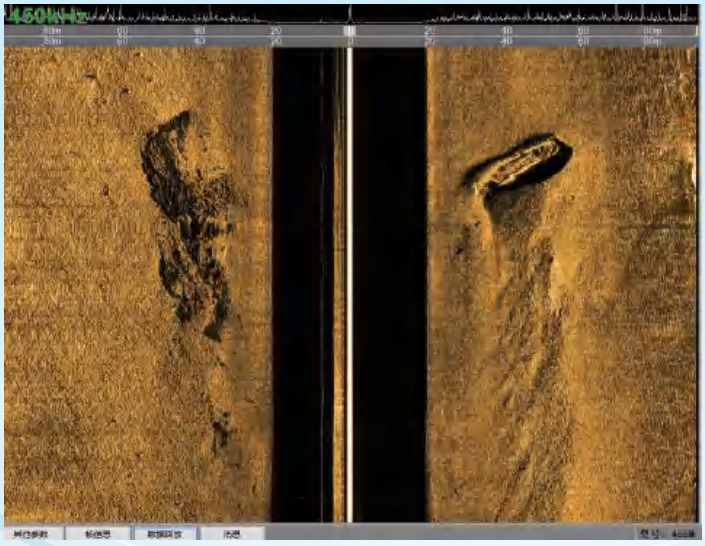
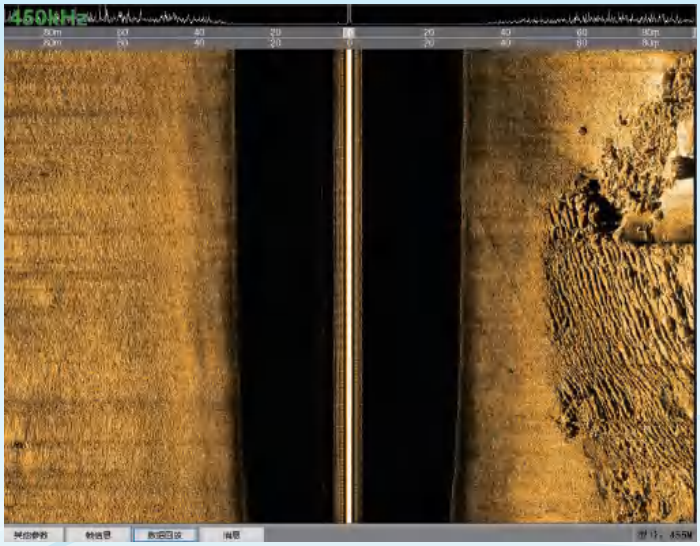
Sonar Specifications	Shark-S455ME
Number of Beams	10 beams (5 per side)
Operating Frequency	High-speed mode: 450kHz; Low-speed mode: 100 kHz / 450kHz simultaneous
Pulse Type	LFM (Chirp) / CW, 60 kHz bandwidth
Maximum Range	450m @ 150kHz; 180m @ 450kHz
Beamwidth	Horizontal: 0.56° @150kHz; 0.14° @450kHz; Vertical: 50°
Resolution	Along-track resolution: 450kHz: 15cm @60m, 45cm @180m; 150kHz: 0.01h (range); Across-track resolution: 450kHz: 1.25cm; 150kHz: 2.5cm
Transducer Mounting Angle	Best performance at 20° downward tilt
Maximum Operating Depth	2000m（Customizable up to 6000 meters）
Transducer Dimensions / Weight	1347mm(L)×86mm(W)×23mm(H) / 8kg
Sealed Electronic Unit Dimensions / Weight	500mm(L)×130mm(D) / 9kg
Unsealed Electronic Unit Dimensions / Weight	516mm(L)×174mm(W)×145mm(H) / 9kg
Power Supply / Consumption	18~36VDC, maximum 50W
OTech Software	Real-time mosaicking; live online mapping; OTSS and XTF formats recording; SDK development support; continuous raw data output.
Interface	High-speed Ethernet communication supporting real-time input of control commands; equipped with RS-422 synchronous interface signals.
Operating Speed	High-speed mode: up to 10 knots; Low-speed mode: 2 - 6 knots





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