

UAC-300S

250m Wide Swath Side Scan Sonar (300kHz)



Overview

The UAC-300S side-scan sonar is a multi-beam system developed to deliver efficient and high-clarity underwater detection and imaging for applications such as target detection and positioning. Built upon the team’s extensive experience in imaging-sonar system design, low-noise electronic engineering, signal processing, and image processing, the system adopts a modular design philosophy with maturity and stability as its core principles. It integrates technologies such as dynamic focusing, low-noise and low-power electronic circuits, image equalization and enhancement, and real-time mosaicking. The sonar can be deployed on towfish, UUVs, and other carrier platforms, offering clear imagery, stable performance, and ease of operation.

Technical Specifications

Specification	
Operating Frequency	Center frequency 300 kHz, bandwidth 25 kHz
Beam Angle	Horizontal 0.22°, vertical 40°
Maximum Detection Range	250 m per side, 500 m total (dual-side)
Image Resolution	8.0 cm × 2.5 cm
Beam & Speed Adaptation	Supports 1~20 beam adjustment at different operating speeds
Communication Interface	100 Mbps / 1 Gbps auto-adaptive Ethernet
Power Supply / Consumption	18–36 VDC, typical power consumption 35 W
Maximum Operating Depth	300 m (customizable)
Maximum Survey Speed	10 kn
Dimensions	Transducer: 1349 mm × 86 mm × 28 mm (per side); Electronics pod: Ø150 mm × L550 mm
Weight	Transducer: ≤6.5 kg (per side); Electronics pod: ≤10 kg
Environmental Conditions	Operating temperature –10°C to 50°C; Storage temperature –40°C to 70°C
Software Development	Provides GUI software or SDK; Supports secondary development
Data Storage	Supports DAT format or standard XTF format; supports long-duration offline data storage

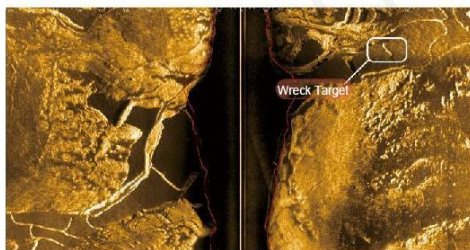
Key Features

- **Scan Coverage:** Wide swath capability, with a maximum range of up to 250 m per side.
- **Imaging Principle:** Supports high-speed detection and imaging, with survey speeds up to 9 knots.
- **Flexible Operation:** Can be integrated with geographic information systems for convenient operation.
- **Wide Applications:** Compatible with multiple carrier platforms, including towfish and UUVs for underwater imaging.

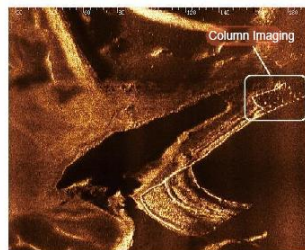
Application

- Marine engineering
- Pipeline and cable route surveys
- Sensitive target detection
- Search and rescue operations

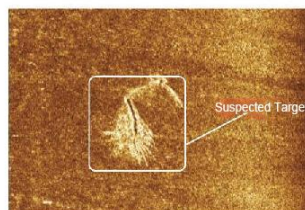
Imaging Images



Wreck Target



Lake Bottom Imaging



Sea Sweeping Imaging



Sea Sweeping Imaging

The UAC-300S has successfully completed multiple lake and sea missions, and some of the imaging results are shown in the figure.