UAC-500F

Forward-looking Sonar 500kHz

Overview

The UAC-500F forward-looking sonar adopts multi-beam imaging technology to achieve real-time high-resolution imaging of suspended objects or obstacles in the water ahead of the sonar. Boasting a compact size and highly integrated design, the product features fully independent and controllable software and hardware. It is suitable for meeting the navigation support or target detection needs of small and medium-sized underwater vehicles.

Technical Specifications

SPECIFICATIONS	
Operating Frequency	500kHz (center), 30kHz (bandwidth)
Beam Field of View	90° horizontal, 7° vertical (Customized：120° horizontal, 20° vertical)
Maximum Detection Range	150m (Favorable seawater condition, absorption coefficient: 150 dB/km, target strength: −15 dB)
Range Resolution	≤5 cm (design value: 2.5 cm)
Angular Resolution	0.8°(Customized：1°); (128ch, half-wavelength array layout)
Communication Interface	100M/1000M adaptive Ethernet
External Sync Interface	RS485, pulse width: 1 msd>
Power Supply/Power Consumption	18-36VDC, 25W (typical)
Maximum Operating Depth	100 m (Aluminum Alloy VerData Interfacesion); 600 m (Titanium Alloy Version);
Dimensions	207.7×121.2×86.8 mm(Titanium Alloy); 207.7×132×88.5 mm(Aluminum Alloy)
Weight	≤3.3 kg (Titanium Alloy); ≤3.0 kg (Aluminum Alloy)
Environmental Adaptability	Operating temperature: -10℃~50℃; Storage temperature: -40℃~70℃
Software Development	Provides display and control software or SDK, supporting secondary development
Data Interface	1 port of auto-adaptive Gigabit/100Mbps Ethernet
Mechanical Interface	Secured to carrier via four M4 screws with 5 mm thread depth

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Key Features

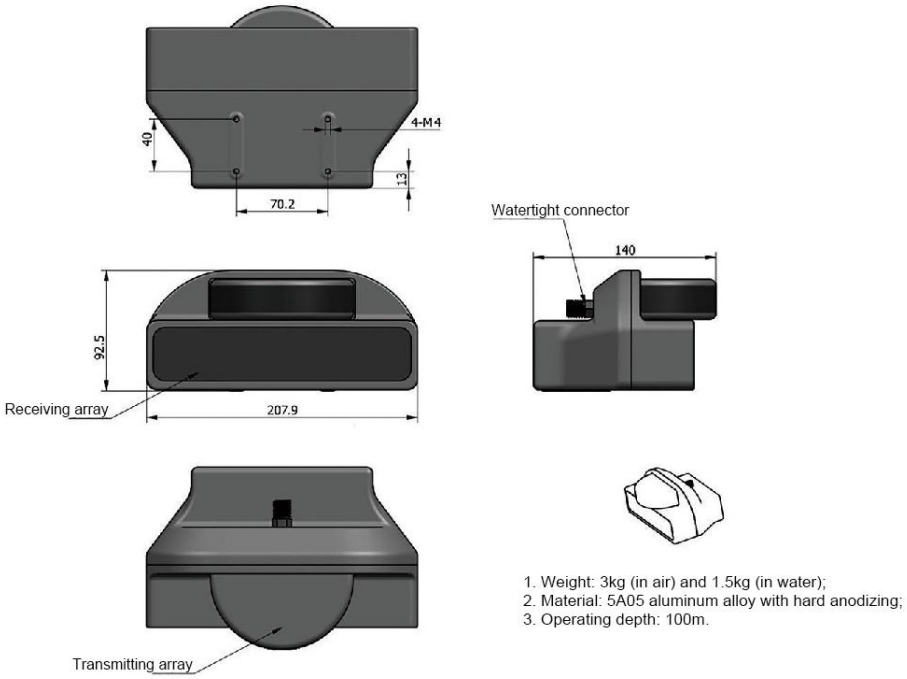
Imaging Principle

Multi-beam High-Resolution Imaging Technology

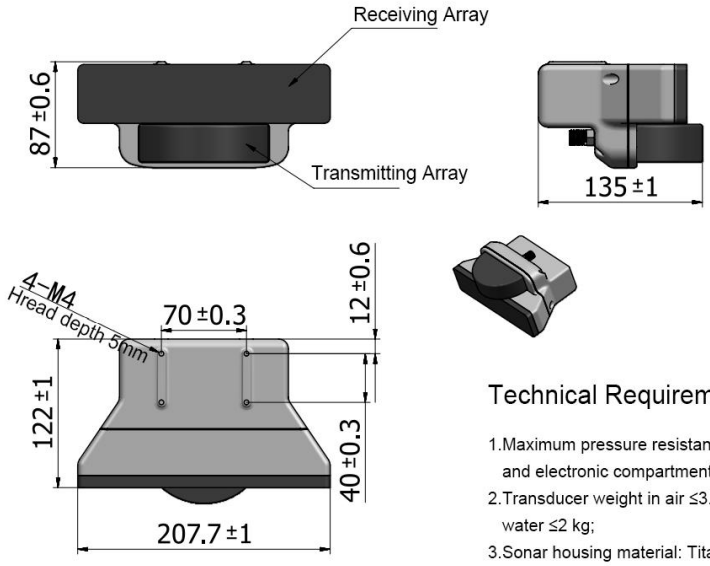
Compact Size

Compact Size with High Integration Level

Structural Dimensions



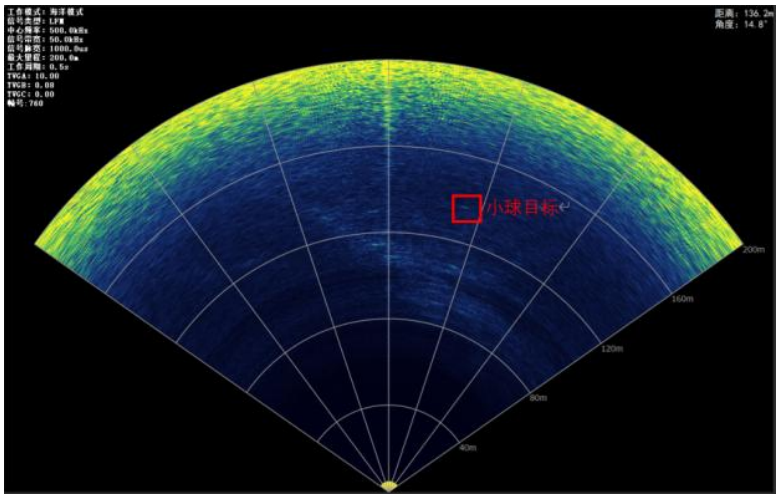
1. Weight: 3kg (in air) and 1.5kg (in water);
2. Material: 5A05 aluminum alloy with hard anodizing;
3. Operating depth: 100m.



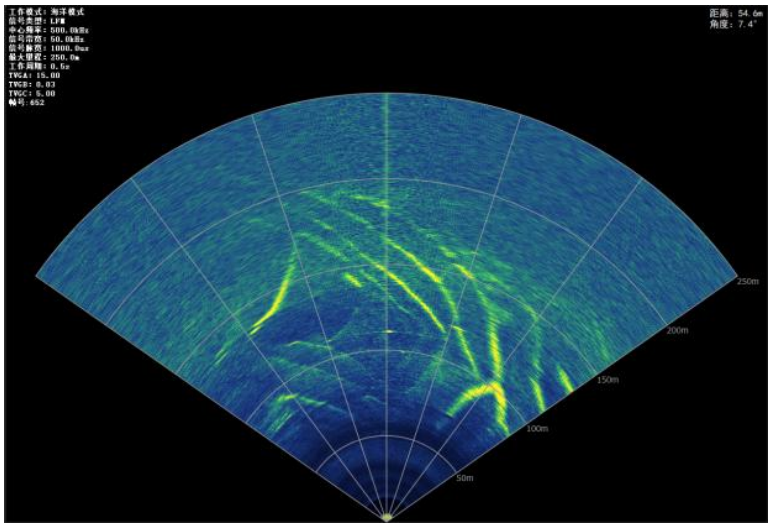
Technical Requirements

1.Maximum pressure resistance of transducer and electronic compartment: 720 m;
2.Transducer weight in air ≤3.3 kg, weight in water ≤2 kg;
3.Sonar housing material: Titanium Alloy.

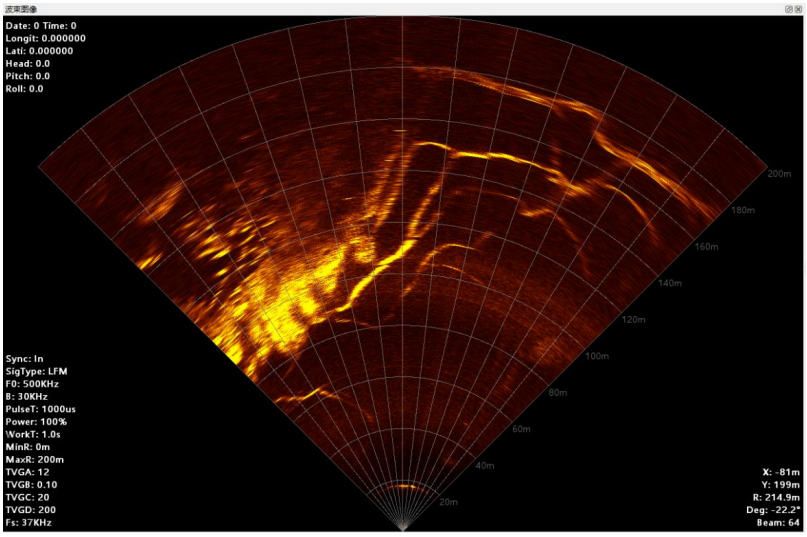
Imaging Example



Max detection range: 136 m (target TS: −22.5 dB)



Reservoir topographic imaging (Range: 250 m, beamforming sector angle: 120°)



Reservoir topographic imaging (Range: 200 m, beamforming sector angle: 90°)

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