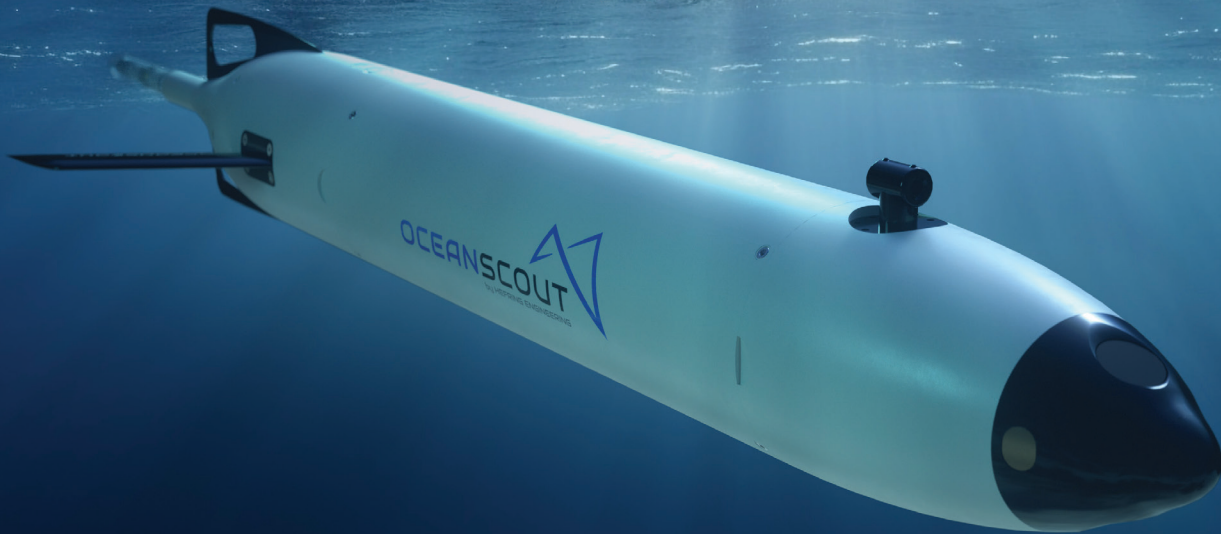




REINVENTING THE OCEAN GLIDER

Hefring Engineering is re-imagining one of the most versatile tools in ocean observation and research.







BUILT FOR SCALE

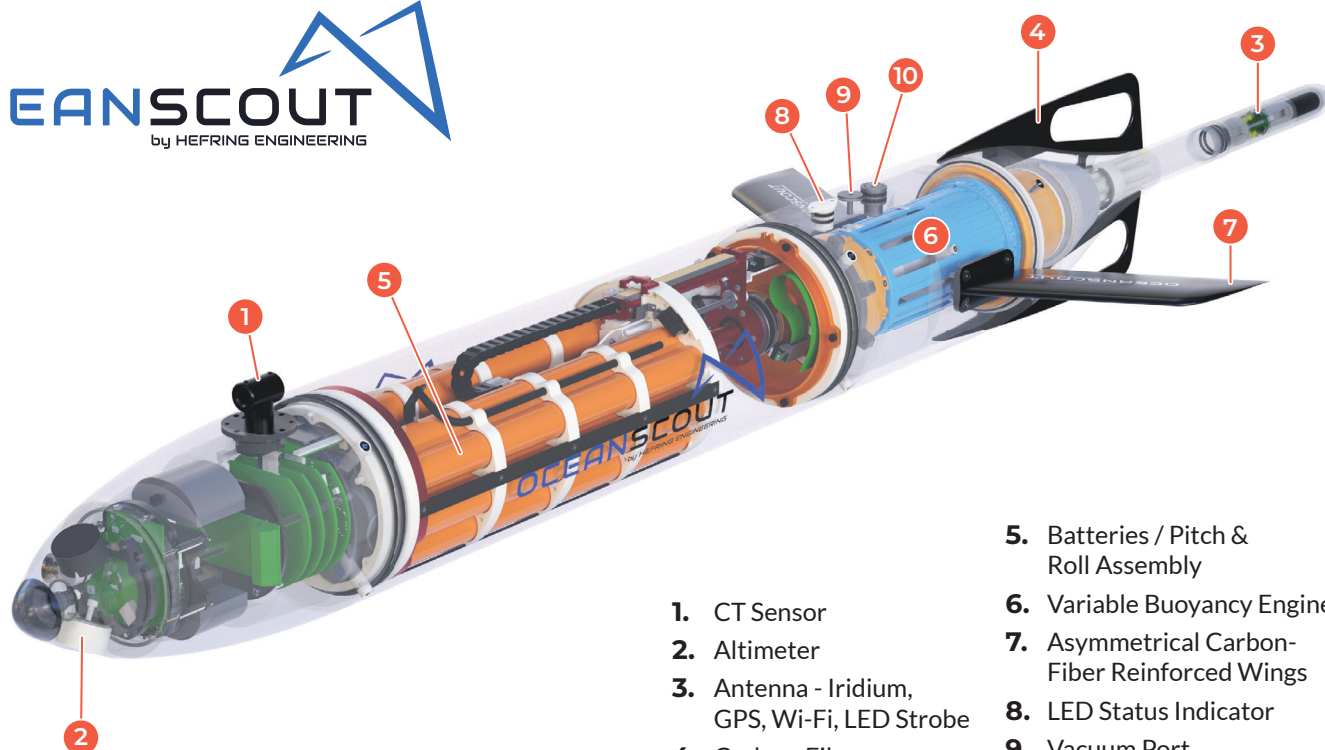
Hefring enables scientists and other stakeholders to view more of the ocean with a scalable, low-cost, autonomous platform. Oceanscout can be handled by one person, making it easy to deploy and recover anywhere in the world. The platform is stealthy with no surface expression through most of the mission and minimal expression when surfacing.

An enterprise level piloting interface expands platform use to non-traditional users and large institutions alike, broadening our collective understanding of the world's oceans.



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 hefring.com



1. CT Sensor
2. Altimeter
3. Antenna - Iridium, GPS, Wi-Fi, LED Strobe
4. Carbon-Fiber Tail Fin Handle
5. Batteries / Pitch & Roll Assembly
6. Variable Buoyancy Engine
7. Asymmetrical Carbon-Fiber Reinforced Wings
8. LED Status Indicator
9. Vacuum Port
10. Pressure Relief Valve

PARAMETERS	
Weight	22.5 kg
Hull Diameter	16 cm
Length	1.61 m - 1.75 m
Displacement Volume	21.6 L - 22.4 L
Buoyancy Change Volume	0.75 L
PERFORMANCE	
Operational Depth	200 m
Battery Capacity	1.2 kW-hours
Battery Type	Lithium Primary MnO ₂
Approx. Duration	1 month
COMMUNICATIONS	
Iridium	Short Burst Data
WiFi	802.11 abg with high gain antenna, Access point and station modes supported
Ethernet	10/100 Mbit/s
LED Strobe	Hi visibility recovery aid
Status Indicators	RGB high intensity LED
GPS	ZOE-M8G
CONTROL	
Cloud-Based Piloting Software	Iridium SBD and direct Internet connection
Glider Control Interface	Secure shell over WiFi

SENSORS	
Nortek Altimeter	500 kHz
JFE CT ACTD-OEMU-Z105	<ul style="list-style-type: none"> Range: -3-45°C, 0.5-70 mS/cm Resolution: 0.001°C, 0.001 mS/cm Accuracy: ±0.01°C, ±0.01 mS/cm Response time (63%): <0.2 s
Keller Pressure Sensor PA-7LH	<ul style="list-style-type: none"> Accuracy: ±0.50%FS Long-term stability: ±0.25% FS/year Range: 0-30 bar
Integrated heading and attitude	
INCLUDED ITEMS	
<ul style="list-style-type: none"> Rugged Glider Shipping Case Portable Glider Lab Stand Vacuum Valve Kit Glider Tool Kit 	
OPTIONAL EXTRAS	
<ul style="list-style-type: none"> Full Spares Kit Glider Deployment & Recovery Cart Vacuum Pump 	
SERVICES	
Support services available. Please inquire.	

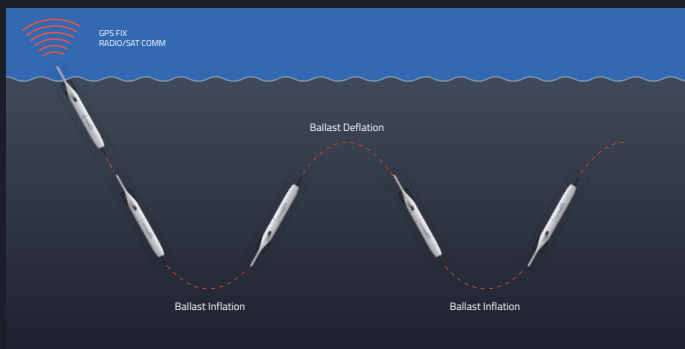
 Owned, operated, and manufacturing in the USA.

PASSIVE ACOUSTIC MONITORING

Oceanscout-PAM is purpose built for passive acoustic monitoring (PAM) in the ocean. The glider is ideal for these measurements because it offers flexible spatial sampling, minimizes self-noise, and offers near real-time feedback.

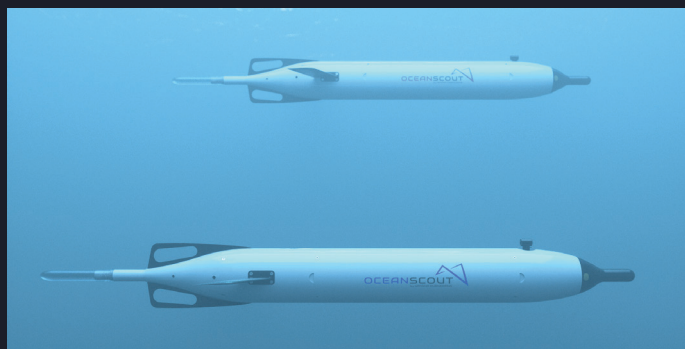


MEASUREMENT MODES



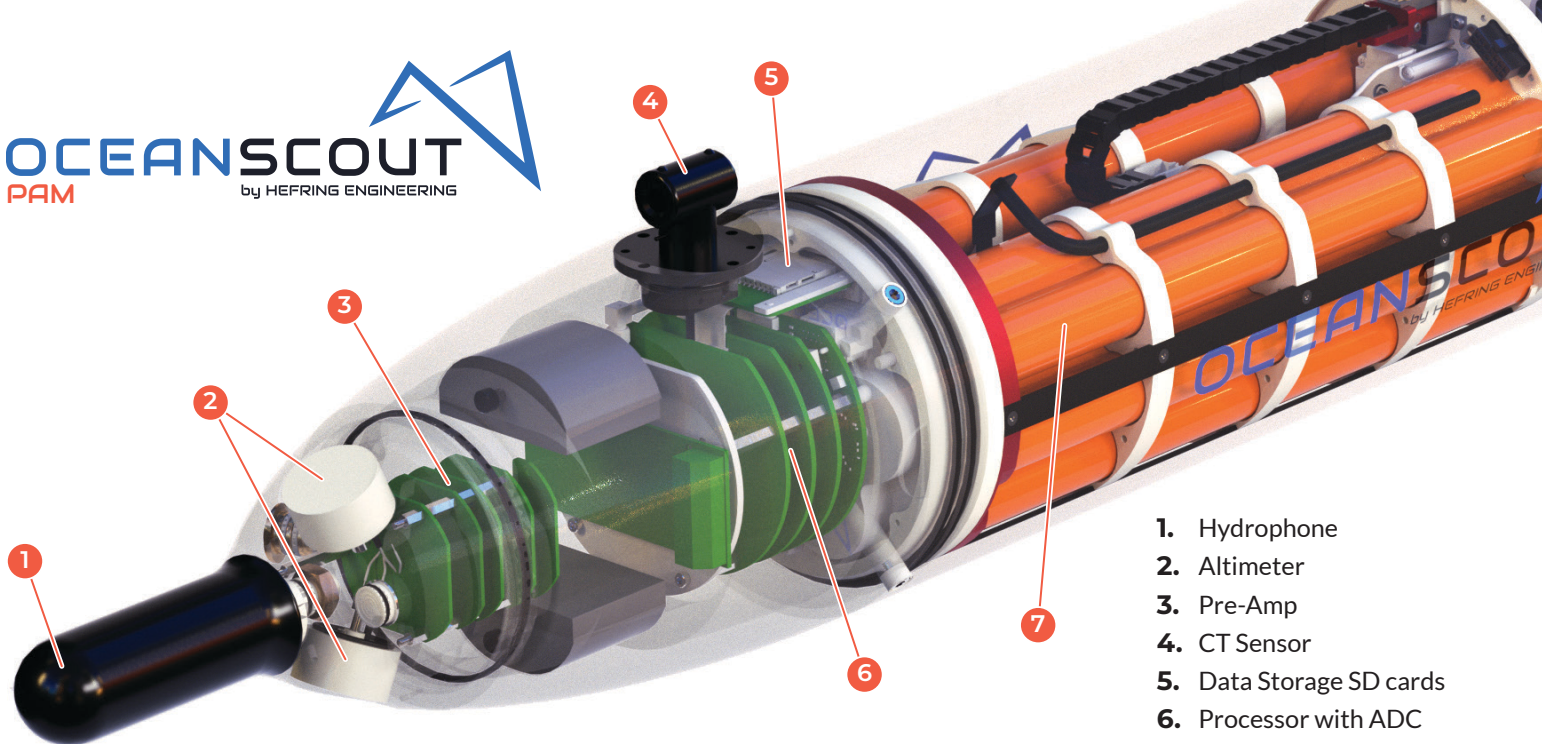
UNDERWAY

Oceanscout-PAM can listen while swimming over a user-defined mission within a programmed area of interest and surface if an anomaly is detected.



HOVER


Oceanscout-PAM can swim to a waypoint and hover in place at a user-defined depth, then surface if an anomaly is detected.



1. Hydrophone
2. Altimeter
3. Pre-Amp
4. CT Sensor
5. Data Storage SD cards
6. Processor with ADC
7. Batteries

Oceanscout-PAM employs a custom built passive acoustic measurement system, with tightly integrated hydrophone and processors, which reduce self-noise common in after-market PAM integrations.

CUSTOM PAM SYSTEM	
Hydrophone	HTI-92-WB (ASW grade)
Frequency Response	2 Hz to 50 kHz
Self-noise levels below sea-state zero	up to 10 kHz
Onboard data storage	2 TB
Sampling rates	up to 250 kSPS
Data samples	24 bit

 Owned, operated, and manufacturing in the USA.

