



Flyer Survey Unmanned Vessel USV-W110



USV-W110 Flyer Survey Unmanned Vesse



Application scenarios: Marine patrol, Marine emergency rescue, Marine transportation.....



USV-W110 Flyer Survey Unmanned Vessel





argument

2m/s Cruising speed

5m/s Maximum speed **20kg** Maximum load

≤4class Ability to withstand wind and waves 7kg Weight

4h Endurance time 0.2-200m

Depth range

110cm Hull length



Design concept: No one's boat, wisdom travel miles

Multifunctional module design

Centimeter-level positioning, accurate and worry-free Plan the path, navigate autonomously, save manpower



Centimeter-level positioning, accurate and worry-free. Plan the path, navigate autonomously, save manpower.

"Zhixing" refers to the unmanned ship's advanced sensors and artificial intelligence algorithms that enable **autonomous navigation**, **path planning and obstacle avoidance**. The design of "Miles" emphasizes the pilot's unique control module system, ensuring the **stability and safety** of the unmanned ship, so that it can still sail thousands of miles in the complex Marine environment.

General layout design



Industrial design a hull shape optimization

The innovative hull shape optimization design reduces overall drag by 17% and increases endurance by 35%



The multi-body structure design of the unmanned ship can provide better stability and help to **reduce the resistance of movement in the water**. This design is conducive to improving the sailing efficiency and stability of the unmanned ship.

This product is capable of operating at ≥30kg of compression shock pressure and dealing with more complex scenarios.



💶 Industrial design — Modular design

The unmanned ship adopts five functional modules integrated design, aiming to improve the maintainability, scalability and adaptability of the unmanned ship.



2.1Dynamic modular design



2.2Communication module

The power module includes two 22000mAh capacity batteries , achieving up to 4 hours of mission life , which is 20% more than similar products on the market.

In terms of positioning , based on RTK real-time accurate positioning antenna and cm-level accuracy real-time dynamic positioning aerial antenna , accurate positioning and orientation of unmanned ship ≤10cm can be achieved.



2.3Sensor data acquisition module

Unmanned ships can obtain high-precision bathymetric data and topographic data, providing data support for Marine ecological protection and restoration, Marine pasture construction, and Marine disaster prevention and control.



Industrial design — Modular design

The unmanned ship adopts five functional modules integrated design, aiming to improve the maintainability, scalability and adaptability of the unmanned ship.



2.4Balance holding module

Combined with the horizontal control of the control system , It can effectively improve the stability of the unmanned ship's operating attitude. 2.5Control module

The control module enables autonomous navigation and mission execution, reducing the need for manual operation and improving operational efficiency and safety.



Industrial design—Lightweight and environmentally friendly design

High performance and high strength lightweight materials can be used to ensure the strength of the hull while reducing the weight by 21%.



It meets the needs of lightweight hull and environmental protection, while ensuring the stiffness and strength of the structure, reducing the weight of the hull and water flow resistance by more than 10% The unmanned ship weighs 7 kg, supports single easy operation, facilitates rapid deployment, and ADAPTS to various mission scenarios.



Industrial design — Waterproof grass anti-winding protective net design

The bottom protective net is a blade type spacer structure, which is conducive to water flow through, reduce resistance, and effectively reduce the probability of water grass entanglement by 60%.



A protective net is installed around the bottom drive of the unmanned boat to cover the drive and prevent it from being affected by water weeds and fishing nets, effectively reducing the chance of water weeds dying by 60%.



The mesh is made of corrosionresistant materials to ensure its durability in underwater environments.

The protective net is a blade type spacer structure

The structure is based on fluid mechanics and uses an important arrangement of curved blades to ensure uninterrupted flow while minimizing flow resistance.





Industrial design—Semi-recessed culvert thruster design

Equipped with double pump jet culvert thrusters, the maximum speed reaches 5 m/s, and the powerful power escorts the operation.

The design also has high propulsion efficiency and sailing stability, especially in terms of seakeeping, to provide stable power output, so that the unmanned ship can maintain good handling at various speeds. It can effectively improve the adaptability and operational efficiency of unmanned ships.





The semi-embedded design of the thruster helps to reduce the interference of debris when working in the shallows.



Industrial design—Advantages and characteristics





Product advancement



Design patent: "Unmanned Ship (Pilot Measurement USV-W110)" Utility model Patent Certificate: "An intelligent control unmanned ship Based on Modular design"

02 National scientific and technological achievements evaluation report

Conclusion: Through the certification of the national authority, the product has reached the leading domestic and international advanced level, and it is suggested to accelerate the promotion and application.

	2024年11月27日	■ # 9 第22044540 9 ● # # 9 第22044540 9 ● # # 0 第22044540 9 ● # # 0 第22044540 9 ● # 0 # 22044540 9 ● # 0 # 2204540 9 ● # 0 # 2204550 9 ● # 0 # 0 # 2204550 9 ● # 0 # 0 # 0 # 0 # 0 # 0 # 0 # 0 # 0 #	报告编号: 2 0 2 2 H A 0 0 1 8 1	评价结论 2022年6月8日、新闻的中国和中国特级中国的中心组织也要说有水平 评价专家名单				
申请号成专利号, 2024528764-X 发文序号, 202411270x889280	20(89470	实用新型专利证书 _{实用新型论称:一种开放式深声潜振器的推进系统}	科学技术成果评价报告	姓名 文振华	工作单位 郑州航空工业管理学院航空发动机学院	职称	从事专业 飞行器质量与可称性	新文教华
申请人或专利权人: 海南 记者相找有限公司 发明创造名称: 无人能(飞行者重复USV-Wito)		 ◆ 利 权 人:海南飞行者科技有限公司 <u>地</u>: 570203 海南省海口市国兴大道5号海南大厦根楼海南数据谷 海创空间国层 	成果名称:飞行者无人机无人智能控制系统	李丹松 张 珠	中国航天科技集团公司第四研究院 郑州航空工业管理学院智能工程学院	研究员数授	飞行器动力工程 控制科学与工程	房开松
小 理 豆 に ナ 疾 通 スロ つ 相屈 や和法実施回期等 00 素及国家知识学校同第 244,272 号合告的規定,申请人应当于 2025 年 01 月 27 目之鍵館時以下登用: 第 1 年度年費 90.0 元 已数減 85%	9 步审查,没有发现股回理由。 _{先。} 旧应的专利证书,同时予以	发明人: 新祥光海家豪杜治法 や利号: ZL 2023 2 3598995.X 授权公告号: CN 222062239 U	成 來 突 至: 这个开发突然用这个成本 完 成 单 位:海南飞行者科技有限公司 委托评价单位:海南飞行者科技有限公司	席俊杰	全国工业技术学研究会	教授	飞行攀动力工程	席假土
用已做预用的品、年费000元。 中语人获得随他,还预用的,但这场印刷化局持在专利登记道上登记专利权的投子,颁发专利证书,并 法治金。专利权自己先之目起生效。 中语人帮助他不是预用的,视为放弃取得专利权的投利。 元。 专利则用可适道过用上继点。银行承诺证法,直接向任务处或用家知识产从局专利等能值。纸件由应当可用正确的申请号 用序。则形然我没所意能,未提供上述信息的现为未为增值并存在。了铜嘴般更多开始放出及为增值也更多,说是采用家 即作我们公开网站。	毛规定办理。 L文的文本为基础。	专利申请日:2023年12月28日 投权公告日:2024年11月26日 申请日时申请人:海南飞行者科技有限公司 申请日时发明人: 游泽龙,儒家豪,杜治法 国家知识产权局像黑牛卑人民,各国营村法进行审查,决定投予专利权,并予以公备。 专利从自我权公告之目起主政,专利权有次性及专利权人定是等法律报告以专利至正属之民为法。	委托日期:2022年6月1日 评价形式:会议评价 评价机构:河南省中研汇智科技成果评价 评价完成日期:2022年6月8日	王 列 河南工业大学 批报 副校註本 選. 所检指标符合相关标准要求。 综上所述,该项目技术先进,实用性强,在无人机智能起降领域达到15 先水平,在复杂场景多维感知协同智能起降系统技术达到国际先进水平。 建议:加快推广应用。				
 車 查 员,自动审查 联系电话,010-62356655 Windows, 100-6235665 Windows, 100-6235665 Windows, 100-6236665 Windows, 100-623665 Windows, 100-623665<!--</td--><td>A Contraction of the second se</td><td>ык вк вк вк вк вк ка вк ка вк ка ка ка ка ка ка ка ка ка к</td><td>中 华 人 民 共 和 国 科 学 技 术 部 二零零九年制</td><td colspan="5">理的专家组组长签字: 文 振祥 嗣祖长签字: 虞井松 2022年6月8日</td>	A Contraction of the second se	ык вк вк вк вк вк ка вк ка вк ка ка ка ка ка ка ка ка ка к	中 华 人 民 共 和 国 科 学 技 术 部 二零零九年制	理的专家组组长签字: 文 振祥 嗣祖长签字: 虞井松 2022年6月8日				



Application scenario

The pilot survey unmanned ship has a wide range of application scenarios and unlimited potential, and can carry out topographic survey, hydrological survey, maritime patrol rescue, Marine transportation and other work.





Flyer Survey Unmanned Vessel USV-W110

Hainan Flyer Science and Technology Co.,Ltd.

四下行者科技