

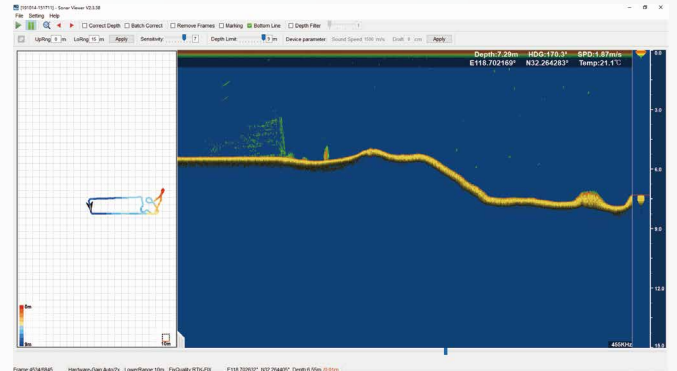
# TERSUS TheDuck™

TheDuck™ floats, and the Depth fixes.

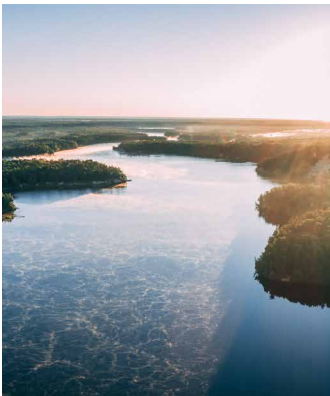


# TheDuck™

TheDuck™ represents a smart, efficient, and productive unmanned surface vessel equipped with a single-beam echo sounder. It provides a fast, dependable, and portable solution to perform bathymetric surveys in various environments, such as rivers, lakes, reservoirs, and coastal areas. With its advanced capabilities and user-friendly design, TheDuck™ is a powerful tool for professionals in bathymetry, offering unparalleled accuracy and precision in the collection of positioning and depth data. TheDuck™ is sure to meet your needs and exceed your expectations.



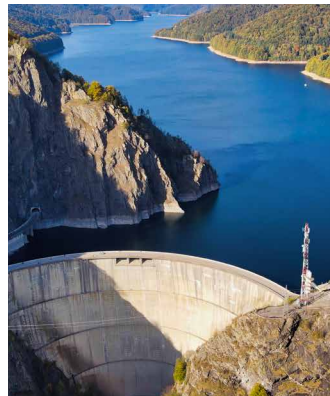
## Application Scenario



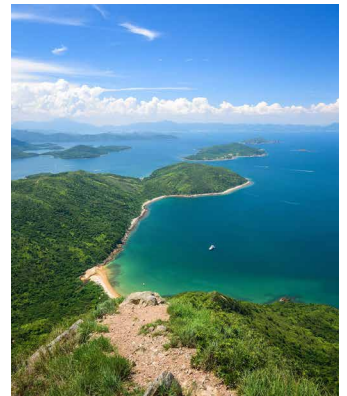
**Rivers**



**lakes**



**reservoirs**



**coastal areas**

# Features



## Versatile Small USV for Bathymetric Surveys

Experience exceptional versatility with TheDuck™, a small USV designed for precise bathymetric surveys of lakes, inland rivers, and coastal areas.



## Enhanced Safety

Equipped with two plug-in mental ducted propeller, TheDuck™ effectively reduces the risk of entanglement with fishing nets, water plants, and surface debris, enhancing operational safety.



## Effortless Operation

Simplify your project with one-man operation throughout the entire process. From on-site transport to installation, operation, and data collection, TheDuck™ offers convenience and efficiency.



## Optional Echo Sounder

TheDuck™ is equipped with a built-in single-beam echo sounder (100 meters@455 kHz or 300 meters@200 kHz) .



## Unmatched Performance

TheDuck™ boasts a lightweight, strong, and stable M-shaped design with a hull made of polymer PP alloy, ensuring optimal performance in various environments.



## Expanded Capabilities

Maximize TheDuck™'s potential by equipping it with Oscar/Oscar-TAP/Luka, unlocking a wider range of applications.



## Seamless Data Transmission

Enjoy enhanced data transmission capabilities with TheDuck™'s two omnidirectional dual 2.4GHz RF antennas. Transmit data over longer and more stable distances (up to 2km), with auto-return functionality in case of signal loss.



## Real-time Data Management

Powered by Android-based software, TheDuck™ provides real-time data display and automatic data recording, ensuring seamless job execution and efficient data management.



# Technical Specifications

## TheDuck™



### Physical

|                               |  |
|-------------------------------|--|
| Hull Dimension:               | 1000*530*340mm   |
| Weight:                       | 7KG(w/o instrument and battery)<br>18KG(Maximum Load)<br>22KG(Normal Weight) |
| Material:                     | High Strength PP Alloy   |
| Hull Design:                  | M-Shaped   |
| Anti-Wave & Wind:             | 3rd Wind Level and 2nd Wave Level  |
| Water Proof:                  | IP67   |
| Power                         |  |
| Rechargeable Lithium Battery: | 8S 29.6V 31.5Ah x2   |
| Battery Weight:               | 4.5kg X2   |
| Battery Endurance:            | 6 Hours x2(run at 2m/s)  |
| Maximum Speed:                | 7m/s   |
| Propeller type:               | 2 plug-in mental ducted propeller  |
| Type:                         | Electric   |

### Direction Control:

Differential veering and reverse without steering engine

### Positioning

Satellite System BDS, GPS, GLONASS, GALILEO, QZSS

Real Time Kinematic Positioning Accuracy(RMS)

- Horizontal:  $\pm(8\text{mm}+1\text{ppm})$

- Vertical:  $\pm(15\text{mm}+1\text{ppm})$

### Remote Control

Communication Method

Real time RF peer-to-peer transmission

Range 2KM

Screen Size 7" high-definition display screen

Waterproof IP67

Function Real-time displays USV control data,  
water depth, positioning status, video data, and power

### Camera Parameters

FOV120°, resolution 1080P, video format H264

### ES200 Single Beam Echo Sounder

Sounding Range

0.15m to 100m, 0.15m to 300m (Optional)

Frequency 455KHz, 200KHz(Optional)

Beam Angle: 5°(455KHz/200KHz)

Sound velocity Setting:

Automatic or Manual 1350 – 1750m/s

Draft: 0~10m

Sounding Accuracy:

$1\text{cm} \pm 0.1\% \cdot D$  (D is the depth of water)

Resolution: 1cm

Data Storage: Automatic Storage, 16GB Memory

Data Format: tsl2, csv, txt

Operating Temperature: -5°C – 50°C

## Tersus GNSS Inc.

### Right to the point.

Tersus GNSS is a leading Global Navigation Satellite System (GNSS) solution provider. Our offerings and services aim to make centimeter-precision positioning affordable for large-scale deployment.

Founded in 2014, we have been pioneers in design and development GNSS RTK products to better cater to the industry's needs. Our portfolios cover GNSS RTK & PPK OEM boards, David GNSS Receiver, Oscar GNSS Receiver and inertial navigation systems.

Designed for ease of use, our solutions support multi-GNSS and provide flexible interfaces for a variety of applications, such as UAVs, surveying, mapping, precision agriculture, lane-level navigation, construction engineering, and deformation monitoring.

Descriptions, specifications and related materials are subject to change.

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To learn more, please visit: [www.tersus-gnss.com](http://www.tersus-gnss.com)

Sales inquiry: [sales@tersus-gnss.com](mailto:sales@tersus-gnss.com)

Technical support: [support@tersus-gnss.com](mailto:support@tersus-gnss.com)