

UAV Echosounder

High-precision single-beam, multi-frequency echosounder for drone-based bathymetric surveys



UAV Echosounder is an advanced aerial bathymetry solution that integrates the multi-frequency Echologger ECT-D052S echosounder (or other compatible models) on DJI UAV drones. This cutting-edge technology enables **precise hydrographic surveys** in hard-to-reach areas, optimizing operational time and costs.

Novatest offers a **step-by-step integration service of the bathymetric sensor on the customer's drone**, along with technical staff training, ensuring perfect compatibility and maximum performance.

Main features:

Dual frequency

Operates simultaneously at 50 kHz and 200 kHz, allowing effective penetration of soft sediments to identify hard substrates and obtain detailed seabed classification.

Ultra-compact design

With dimensions of $\varnothing 74$ mm x 90 mm in length and a weight of 460 g, the ECT-Do52 is easily integrable on drones and autonomous vehicles, facilitating operations in complex environments.

Versatile interface

Supports USB 2.0 and serial (RS-232, RS-485) connections, ensuring extensive compatibility with various data acquisition systems and hydrographic software such as Hypack and HydroMagic.

Integrated sensors

Equipped with a bi-axial inclinometer with a resolution of 0.1° , it enables automatic drone attitude compensation, ensuring accurate measurements even in dynamic operational conditions.

Wide operational range

Capable of measuring depths from 0.5 m up to 200 m, adapting to various marine seabed survey needs.

Applications:

- High-resolution bathymetric surveys;
- Monitoring sediment movements;
- Assessing erosion at the base of bridge piers;
- Port security and management;
- Monitoring waves and tides.

The integration of the Echologger ECT-Do52 on UAVs provides an efficient and precise solution for hydrographic surveys, significantly reducing the risks and costs associated with traditional methods.

Technical features:

Echologger ECT-Do52

Operating frequencies	50 kHz and 200 kHz
Beam width	10° (at 50 kHz), 5° (at 200 kHz)
Operational depth	0,5 m – 200 m
Housing material	Anodized aluminum
Communication interface	USB 2.0, RS-232, RS-485
Data output format	ASCII TXT, NMEA0183
Communication speed	4800 – 115200 baud
Integrated sensors	Bi-axial inclinometer (+/- 90°, accuracy 0.1°)
Power supply	8-75 VCC, 2 W max
Operating temperature	-10°C ... +50°C
Dimensions	Ø74 mm x 90 mm (excluding connector)
Weight	460 g
Software compatibility	Hypack, HydroMagic
Integrated GPS data	Compatible with SkyHub datalogger and radar altimeter (True Terrain Follow) for drone-based surveys

Accessories:

Echologger ECT-Do52S Echosounder with Inclination and Temperature Sensor, Harness, and Mounts for Drone Integration.

Standard configuration

- DJI M350 quadcopter drone complete with accessories, batteries, and remote controller;
- ECT-Do52S Single Beam, multi-frequency echosounder with inclination and temperature sensor;
- SkyHub onboard control unit for acquisition parameter configuration and data storage;
- True Terrain Follow (TTF) system for altitude management;
- UgCS Pro flight planning software;
- UgCS Custom Payload software;
- Hydro Magic post-processing software.

