

# Planck Shearwater Tethered Drone System

Planck Aerosystems Shearwater™ is the most capable small unmanned aerial system for maritime and mobile drone operations. Shearwater features highly autonomous operation, including intelligent computer vision and push-button precision landing. Shearwater can be operated by a lightly-trained user with no piloting skills. Both power and data are passed over the tether for an RF-silent, jam-resistant, long-endurance sensor and communications platform.



## Features

- Autonomous high-precision vision-based GPS-denied takeoff, landing, and position-hold relative to stationary or moving platforms
- Minimal operator training required; no piloting skills required
- Minimal installed hardware
- Adaptable to many different drone airframes
- Uses standard open interfaces for compatibility with third-party systems

## Software and Payload Specifications

Autonomous landing accuracy	< 10 cm on stationary or moving platforms
Position hold accuracy	<1M Horizontal at 100M altitude
Operating system	Linux
Software interface protocol	MAVLink
User interface	Planck PilotHouse™ Android app, or any MAVLink-compatible GCS (Mission Planner, QGroundControl, Tower), ATAK

## Drone Hardware Specifications

Size	700mm
Speed	N/A
Endurance	Unlimited on tether power, 4 minutes on battery backup
Altitude range	10M – 120M
Vessel speed	Up to 20 knots for station keeping (23 mph)
Wind tolerance	24 knots
Sea state tolerance	3 (for autonomous landing) / 5 (for station keeping)
Sensor payload	HD imagery & video; Optional infrared (IR), LIDAR
Total payload capacity	1 kg

## Options

Shearwater is sold as a complete drone system, or as a software-hardware upgrade for existing drones. Planck offers several different system configuration options. Custom development, integration, and engineering services are also available.

**Automatic Securing:** Planck offers a motorized landing pad for Shearwater that automatically secures the drone within seconds after landing, and automatically releases the drone just before takeoff. The motorized landing pad ensures that Shearwater can stay on-station and ready for deployment regardless of vehicle/vessel motion.

**Heavy-Lift Airframe:** Shearwater software is compatible with many different drone airframes, including heavy-lift aircraft such as the DJI S900, which has a payload capacity of 5kg.