



Datasheet – SeaTerra Drone

The Drone System is an autonomous aerial survey platform for low altitude total-field magnetic surveying. Combining a DJI Matrice 210RTK with custom built sensor hardware and software, it is capable of autonomously flying survey grids at altitudes down to just 50cm above ground.



DRONE SPECIFICATIONS

Drone Model	DJI Matrice 210 RTK
Release Date	June 2017
Max Take-off Weight	6.14 kg
Max Flight Time per battery	~ 24 min
Survey area per flight	~ 0.7 ha at 10km/h = approximately 1.8ha per hour
Survey speed	1 – 15 km/h
Min survey height	50cm above ground
Height above ground accuracy	± 10cm
Positioning	DJI RTK (GPS + GLONASS)
Positioning Accuracy	± 2 - 5 cm
Flight Controller	DJI Cendence Remote with custom flight software
Controller frequency	2.4 – 2.483 GHz, 5.725 – 5.850 GHz
Maximum Transmission Range	7km
Operating Temperature	-20 to + 45 °C
IP Rating (Drone)	IP43
Collision Detection System	Forwards: 0.7 – 30m, 60° FOV Upwards: 0 – 5m, 10° FOV Downwards 0 – 10m, 10° FOV



SENSOR SYSTEM SPECIFICATIONS

Sensors	3 x 3-axis Fluxgate Magnetometers
Sample rate	100Hz (higher sample rates possible)
Sensor Spacing	75cm (can simulate 37.5cm spacing with overlapped survey lines)
Array Width	1.5m
Noise levels	~ 2 - 5 nT
Measuring Range	± 250µT
Recording Medium	Onboard via USB and Micro SD, Real time gridding @10Hz available
Survey Grid Creation	Via custom software from a DXF overlay
Sensor System Control	Start/Stop recording and Mode change via buttons on Sensor controller, or remotely via Drone remote control software.
Available Flight Modes	GRID: Drone flies a series of pre-defined grid lines to survey an area, including multiple flights to cover very large survey grids.
	TRACK: Drone follows a track with a given survey width to survey along a roadway/pipeline/cable
	COMPENSATION: Drone performs a flight for compensating the sensor data to greatly reduce noise
	MANUAL: Assisted manual flight. The drone will maintain a set speed and height above ground, but can be steered by the operator.



Flying drone during the survey.



Found UXO after the drone survey.

