



Radar Aware™ - RA350

Resilience. Navigation. Awareness.

Sense-and-Avoid radar for Unmanned Aerial Systems

Wherever ground-based obstacles like rooftop antenna, cranes, trees, or other aircraft in flight, a strategy for object avoidance inflight is required.

The RA350 from Cambridge Sensoriis enables an Unmanned Aerial System (UAS) to detect potential hazards in the flight path.

Detected object can instantly be relayed to onboard flight controllers for automatic avoidance control. Alternatively, when there is a risk of a collision the relative location of all obstacles can be sent by the UAS datalink to on-ground flight controllers.

The RA350 supports safe autonomous operation of UAS, beyond visual line-of-sight of a ground-based operator.

As well as measuring the relative position of potential obstacles to be avoided, the radar also directly measures relative velocity. This could prevent course changes being initiated if objects in the flight path are detected but are already moving away from the radar equipped UAS.

Radar is ideally suited for long range detection performance in all weather conditions, day or night, and is barely affected by fog, dust, bright sunlight or night-time operation.

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KEY FEATURES

Large field of view, covering the direction of flight, for sense-and-avoid. Measures point cloud and clustered objects.

Interfaces to 3rd party flight controllers through open protocol definitions and Sensoriis application programming interface (API).

No moving parts, fully electronic beam-steer antennas arrays.

The radar is designed for the Small Weight and Power (SWaP) requirements of civil UAS.

SPECIFICATIONS

Maximum detection distance [m]	15	125	250
Distance resolution [m]	0.06	0.5	1.0
Angular field of view Horizontal [Deg]*	30	30	30
Frame update rate [Hz]	4.8	4.8	4.8
Angular resolution horizontal	1.5 deg		
Angular field of view vertical typical	30 deg		
1m ² RCS detection, boresight	90 m		
10m ² RCS detection, boresight	210 m		
Physical			
Dimensions (w.h.d)	190 x 152 x 75mm (without connectors)		
Weight	1,200 grams		
Power supply	12Vdc		
Interface	Ethernet 1Gbps, RJ45		
Environmental			
Ingress	IP65		
Temperature	-20 to 60 degC		

* Alternative distance/resolution/field-of-view/update, options available, including FoV to 120 degrees.



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Cambridge Sensoriis Ltd
Cambridge. UK
info@cambsensoriis.com
www.cambsensoriis.com