

mmWave Sense & Avoid Radar for UAVs

Drones are being used in an increasing number of sectors, from agriculture to parcel delivery, from construction to disaster relief. In many of these cases, such as delivery of medical supplies, time is of the essence and the ability to fly safely in all conditions is critical.

The rapidly increasing world-wide deployment of drones has highlighted the need for an all-weather, day & night persistent situational awareness sensor, capable of the detection, tracking, and recognition of static & moving objects.

The next generation of drones will require fully autonomous flight into unknown locations, and the use of radar sensors to detect the surrounding environment in front of and beneath the drone will become mission critical.

Increasingly our clients see the ability to integrate our radar capabilities into the overall flight control system design as an effective way to deliver improved operational capability.



Technology Solution

Plextek has successfully developed a mmWave Sense & Avoid radar in a compact form for deployment on small drones. This technology enhances the potential of UAVs, broadens their roles, and improves operational capabilities.

60 GHz radar was identified as the ideal technology, taking advantage of latest advancements in consumer telecoms, reducing antenna size, weight, and power requirements. The system is built around a low-cost COTS system, allowing reduced processing power and low power operation in a compact form-factor.

In airborne field trials, the system has detected small, static obstacles above ground clutter, including powerlines, metal poles, people, and cars at ranges out to hundreds of metres. Doppler processing has also been used to identify moving objects including small drones and birds.

This technology can be integrated into existing UAV flight control systems, providing all-weather capability for both fixed-wing and rotary-wing autonomous flying vehicles.

About Plextek

We have a 30 year history of providing technology solutions to a variety of organisations.

Plextek understands today's key challenges for smarter technology development and can generate both the ideas and deliverable solutions to the assured level of security, performance, resilience and ergonomics that you need. We are a product development & consulting company that works with clients to achieve results based on their specific requirements. Our engineering experience, supported by our library of IP for key technology elements, aids accelerated time to market and greater cost effectiveness.

Contact

If you are interested to know more about how Plextek can help you achieve your technology goals, please contact hello@plextek.com to discuss your objectives further.

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