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News

TEKEVER and CRFS launch UAS with an ultra-sensitive RF receiver as a payload

📅 20th November 2023 👤 Tony Kingham 🔍 CRFS, RF receivers, TEKEVER, UAS, unmanned aerial system, unmanned aerial vehicle

TEKEVER a manufacturer of unmanned systems technology and CRFS a pioneer in building ultra-sensitive RF receivers for spectrum monitoring and geolocation, have successfully completed phase one of their system integration partnership and launched the first sub-tactical unmanned aerial system (UAS) carrying highly sensitive RF sensors as a payload.

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The TEKEVER AR5 Uhas an endurance range of 20 hours, a payload capacity of 50 kg, and a cruise speed of 100 km/h. The RFeye Node is a lightweight and rugged RF receiver with a 100MHz IBW and a frequency range of up to 40GHz. Integrating an RFeye Node into an AR5 allows teams to geolocate ground-based targets situated beyond the horizon – vastly increasing intelligence, surveillance and reconnaissance (ISR) capabilities.

Capable of taking off from short, unpaved airstrips, the wide-area surveillance AR5 is easily deployed. When integrated with ruggedized RF sensors that have an IP67 form factor and are optimized for size, weight and power (SWaP), the UAS offers unparalleled spectrum monitoring, detection, signal capture, and geolocation (TDoA – time difference of arrival) capabilities.

The partnership between CRFS and TEKEVER gives end-users an asset covering vast land or sea areas with many potential applications – maritime surveillance, search and rescue, border monitoring, military ISR, and even regulatory spectrum monitoring. Thanks to the altitude at which the drone operates, the increased signal collection radius results in unprecedented operational range gains – enabling new concepts of operation.

For advanced capabilities, combining the integrated UAS with existing ground-based units allows users to create an adaptable multidomain network of receivers for superior passive ISR over huge areas. This is particularly important in active combat zones, as increasing altitude allows signals to be detected at greater distances – further from the front line.



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Dr. Pio Szyjanowicz, COO of CRFS, said, “To make this happen, our engineering teams have combined their ingenuity and agility to overcome the technical challenges that are inevitable when integrating high-performance electronics systems on an airframe. One of the most significant was that UAS have a significant number of transmitters onboard, that have the potential to interfere with the highly sensitive RFeye receiver payload. Achieving the optimal solution in terms of antenna position and RF filtering is just one example of the excellent teamwork between TEKEVER and CRFS.”

Tiago Nunes, Product Director at TEKEVER, said, “The groundbreaking partnership between TEKEVER and CRFS is a testament to the power of collaboration. It’s a game-changer, offering end-users an incredibly versatile asset that can cover vast land and sea areas. The possibilities are limitless, from maritime surveillance, search and rescue, border monitoring, to military ISR, and even regulatory spectrum monitoring.”

This partnership showcases the remarkable synergy between the two companies, exemplifying their dedication to pushing the boundaries of innovation. It is a perfect union of expertise and technology, resulting in a solution that exceeds all expectations.

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