INTERSOFT ELECTRONICS

SkyRF

Complex Scenario Generation for IFF and PSR

The SkyRF Generator offers advanced capabilities for complex scenario generation in both IFF and **Primary Surveillance Radar (PSR)** domains. It is a specialized configuration of SkyRF®, the widely adopted RPAS-based solution for **CNS (Communication, Navigation, and Surveillance)** measurements. By enabling target generation and scenario simulation at altitude, the SkyRF Generator introduces more efficient and flexible methods for **IFF system certification, sensor alignment,** and **Combat Management System testing**—reducing the need for costly and logistically demanding ground-based setups.

IFF / AIMS Certification

The SkyRF Generator can simulate radar targets for secondary surveillance radar (SSR) in Modes 1, 2, 3/A, and C, supporting both transponder and interrogator functions. Additionally, a transponder module can be mounted to enable simulation of advanced modes such as Mode S and Mode 5. The Mode 5 simulation capability is designed to support ***IFF system certification in accordance with AIMS standards***, making the SkyRF Generator a valuable tool for testing and validating compliant systems.

PSR Sensor Alignment

Many airfields equipped with Primary Surveillance Radar (PSR) systems use active reflectors to verify the geographical alignment of radar video with key reference points such as touchdown zones and runway intersections. These ***active reflectors***, also referred to as ***stationary targets***, must generate a Doppler shift to avoid being suppressed as clutter by the radar's Moving Target Indication (MTI) or Moving Target Detection (MTD) processors. This ensures the target is displayed on the Air Traffic Controller's radar screen. ***The SkyRF Generator*** provides a dynamic 360° target with configurable parameters for ***Doppler shift, radar cross section (RCS), and distance***, making it an ideal tool for precise PSR alignment and system validation.

Missile Generation – Testing of Combat Management Systems

Testing Combat Management Systems such as Counter Battery and Missile Defense radars is traditionally complex and costly. Conventional field testing requires live ammunition and access to secure test ranges, both of which involve significant logistical and financial challenges. ***The SkyRF Generator*** offers a more accessible and efficient alternative by simulating targets with predefined parameters such as ***radar cross section (RCS), Doppler shift, and velocity***, following realistic ***ballistic trajectories.*** These simulated signals are transmitted at RF level, allowing the radar system under test to detect and track the virtual target. The system's response can then be compared against the generated scenario for accurate performance evaluation and validation.