



SPECTRUM DOME™

Persistent Tactical Spectrum Situational Awareness

Enabling Persistent RF Spectrum Tactical Situational Awareness

In the modern battlefield, use of the RF spectrum is an integral part of the combat arena. RF transmission is used by both sides of any conflict, both for communication and for electrical warfare. The use of RF enables real-time voice communication, wireless data transfer, video streams from both manned and remotely piloted aircraft systems, command and control systems, jammers, and more.

The RF spectrum is heavily used, and signal intelligence (SIGINT) is critical for achieving situational awareness regarding existing and emerging threats such as enemy UAS/UAV systems, jammers and other AEW systems, as well as enemy tactical forces. It enables understanding of the Electronic Order of Battle (EOB), essential for spectrum dominance.

RAFAEL addresses this challenge with SPECTRUM DOME, a comprehensive SIGINT solution that detects, collects, identifies, and geolocates RF signals in real time.

Benefits

- Persistent RF spectrum situational awareness
- Scalable system
- Sensors for multiple platform types: stationary, deployable, and mobile
- Multi-terrain operation, including land and maritime environments
- Simple installation and integration
- Low SWaP
- Modularity and expandability





Advanced SIGINT Technology

SPECTRUM DOME is a real-time SIGINT solution that overcomes the challenge of detecting, isolating, classifying, and geolocating RF transmissions from different transmitters that operate simultaneously.

The system consists of sensors connected to a computation hub. These sensors can be collocated on a single platform, or spread among multiple platforms. Thus, the system handle a multitude of operational scenarios, from a single-platform operating in a silo to a networked solution of multiple platforms located at different locations and even on the move. The computation hub receives the data collected by the sensors, stores it, and exploits it for creating an intelligence picture.

SPECTRUM DOME is designed to operate in congested RF environments, and supports a variety of signal types. The system supports integration of a wide range of sensors, including third-party sensors. Moreover, it can integrate various effectors, and also queue external

systems. This enables a comprehensive sensor-to-effector SIGINT suite that can provide end-to-end solutions.

Additionally, RAFAEL provides analyst tools such as spectrograms (waterfall displays), I/Q signal analysis, geolocations on a map, and more.



Main Capabilities

- Wideband coverage: 30-6000MHz (can be expanded according to user requirements)
- Detection, identification, and geolocation of signals of interest
- Creation of an EOB picture based on system results
- Spectrogram generation and analysis
- Advanced analysis of SIGINT data collected over time
- Operates in congested RF environments



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