DroneNet
Rapid Deployment

RD Counter Drone Solution for Perimeter Security

Multi-Layered Tactical Counter Drone Defense

Netline's DroneNet platform offers a multi-layered, counter drone solution for Detection, Localization and Mitigation of hostile drones, providing a safe environment for strategic compounds or public appearances of high-profile officials. The DroneNet system is, in fact, creating a virtual protection dome over the tactical forces, preventing unauthorized drones to compromise the force.

The DroneNet system is based on Netline's C-Guard family design concept, using a Slider modular architecture, with each module being a self-contained element, forming the jamming and sensing segments. The DroneNet sensor & jammer are installed in transportable, ruggedized trolley-style cases, for operation in harsh weather conditions meeting military standards requirements.

Detection & Identification

Sensing Segment - The DroneNet's detection techniques are based on continuous analysis of time & frequency domains by RF sensors. Preloaded spectral signatures of all commercially available drones are used as the system's database. During the detection phase, the DroneNet searches for activity patterns corresponding to the stored drones' communication signatures. Once a match is found the C4I console alerts a drone has been detected, as well as its type and controller type.

DroneNet's low false alarm rate of is achieved by using an SDR SIGINT receiver, capable of detecting drones based on their spectral signature, being completely agnostic to the drone's protocol data (which might be encrypted or technically challenging to acquire) resulting in a fast-evolving signatures database.

Localization

DF Segment - The DF sensor continuously scans the spectrum, analyzing the spectral activity around a target in risk. A single DF sensor is capable not only to detect unauthorized drones, but also to point the direction from which the drones are trying to enter the airspace. The identity and direction of the drone will be displayed on a C4I console.

Whereas a single DF sensor measurement provides the direction of the drone, using measurements from a network of DF sensors deployed in different locations, can determine the precise location of the drone. The threat will be located and displayed on the network C4I. The accuracy of the estimated location is determined by the number of deployed sensors and the deployment topology.

Mitigation

Jamming Segment - Upon detection the system blocks the communication between the drone and its operator on ISM bands, as well as the GPS signal used by the drone.

Netline's DroneNet jammer is composed of 5 bands covering all potential drone frequencies. Each band addresses a different communication channel used by the drone for a different purpose:

• Disabling the drone's control & telemetry channel, resulting in loss of control over the drone

• Blocking the video downlink transmission

• Jamming the GPS signal, disabling the drone's navigation & stabilization capabilities

The system's modular design enables future upgrade and insertion of additional frequencies and threats.

Main Features

• Covers all drone threats, simultaneously: 433MHz, 900MHz, GPS, 2.4GHz, 5.8GHz

• Passive detection and localization - not subjected to FCC/FAA regulations

• 3D Directional Finding (Azimuth +Elevation)

• Easily deployed, carried by a single person

• Does not require Line of Sight

• Based on an SDR platform, enabling DDS / AWG signal generation

• Zeroize function to delete sensitive data from the system

Technical Specifications:

Jamming Bands	433MHz, 900MHz, GPS, 2.4GHz, 5.8GHz
Detection Bands	433MHz, 900MHz, 2.4GHz, 5.8GHz
DF Bands	2.4GHz, 5.8GHz
Input Power	2 DC / 18-36 DC / 110/220 AC
Environmental	Operating temperature: -10o to +49o C , Humidity: 90%
Dimensions	19" x 4 to 8 rack U (Configuration dependent)
MIL-STD-810F/G Compliance	Temp. (501.4, 502.4), Vibrations (514.6), Rain (506.4), Humidity (507.4), Dust (510.4), Shock (516.6), Low pressure /High altitude (500.4), Salt fog (509.4), Solar radiation (505.5), Immersion (512.5)