Red Sky 2 - Drone Defender System

Low Altitude Anti-Drone and Air Defense Solution

Elbit Systems™ Land

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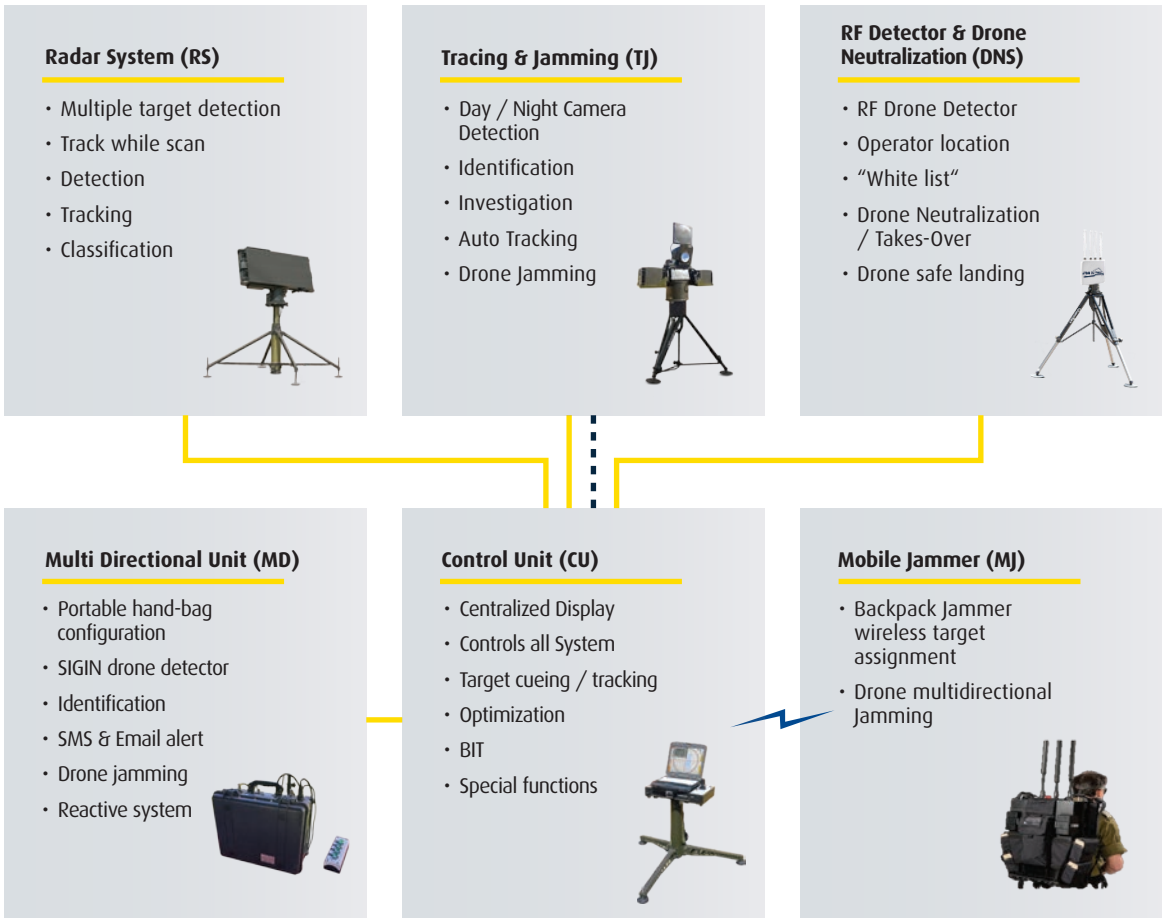
The Red Sky 2 Drone Defender System is a highly effective air defense and airspace protection solution against malicious unmanned aerial vehicles (UAVs). Designed to detect, disrupt, and neutralize UAVs, the combat-proven system provides a reliable, real-time aerial situation picture and can prevent drones from infiltrating sensitive locations such as stadiums, airports, secured compounds, and military bases.

The Red Sky 2 Drone Defender System incorporates multiple sensors, radar, E/O day and night camera, and SIGINT detector delivering real-time aerial situational picture with near zero false alarms. The system features electro-optical acquisition and tracing with powerful directional and multi-directional RF neutralization capabilities with full synchronization between system components.

The cost-effective solution requires minimum personnel and can be operated from a sheltered location or in the open field.

The Red Sky 2 – Drone Defender System Architecture



Legend :

Lan connection — Wireless — Video - - - - -

System advantages

Operational: The system can carry out air defense missions against drone-threats in an effective and efficient manner.

All-in-one: Complete execution of all tasks in one system.

Complete end-to-end solution: The system enables drone detection, classification, identification and neutralization as required in daily operations.

Combat-proven: Operational activities worldwide.

Open architecture: Enables connectivity to external systems and superior headquarters.

User-friendly: Easy to operate, relatively short training time for operators and technical staff.

Easy to maintain: The military-grade standard system is reliable and does not require special maintenance efforts.

Unique aerial defense capabilities and operational flexibility

The compact Red Sky 2 integrates sophisticated drone tracking, detection, and neutralization components.

Radar system (RS)
The radar system is the fifth generation of 3D Tactical Air Defense Radars; X-Band, solid-state electronically scanned, pulse-Doppler radar provide a reliable, real-time aerial picture of targets, accurate target measurements of velocity, range, azimuth and elevation angles, target detection and tracking.

Tracing and jamming (TJ)
The solution's tracking and jamming capabilities provide the central control unit (CU) with 3D coordinates (azimuth, elevation, and range). The operator identifies the target according to the thermal image, and initiates the jamming command remotely from the CU. The tracking and jamming unit features an electro-optic thermal day/night observation system (pedestal) including an automatic video tracker, an SD color day camera, and high-power reactive jammers for neutralization. The unit blocks common civilian drone, quad copter, and UAV bands, with no interference to nearby frequency bands.

Multi-directional (MD) jammer
The multi-directional (MD) unit detects drones by analyzing signaling channels and radio transmissions. The MD jammer unit automatically deactivates the drone operations, blocking RF communication frequencies and GNSS. System configurations include fixed-site installation, a portable hand-bag configuration, and an on-the-move backpack configuration.

Central control unit (CU)
The CU controls and coordinates all of the system sensors and effectors, and all the Red Sky Drone Defender System activities.

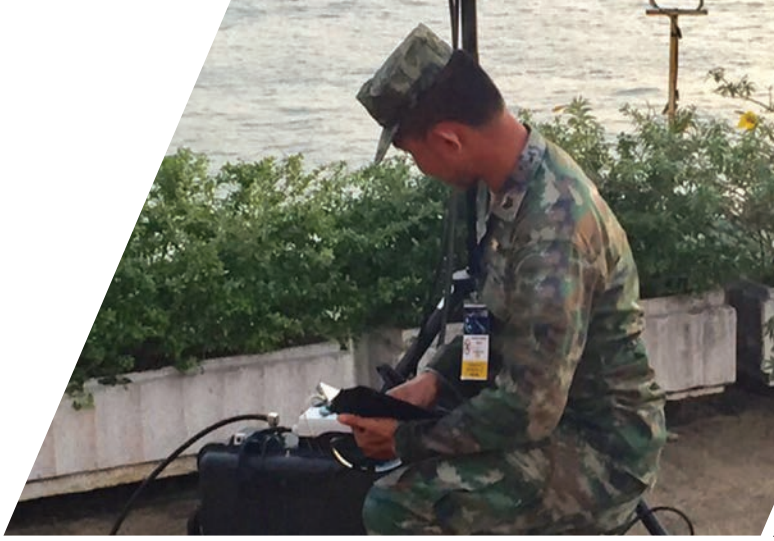
All system activities - target detection, classification, identification, neutralization, and taking over the drones, are managed by a single operator. The CU provides computerized displays of live video images of the tracked target, a unique target acquisition algorithm that recommends optimal interception time, and full system control.

RF detector and Drone Neutralization System (DNS)
The DNS unit is a proactive counter drone solution that detects and mitigates drones nearing, around, or inside a secured perimeter.

DNS - solution layers:

- Monitoring - The system continuously scans the surroundings of the secured site for drones, based on their RF communication signature.
- Detection - When a drone is detected, the system presents its details on the dashboard: drone type, serial number, location, operator location.
- Deny takeoff - If a drone is detected inside the geo-fenced area while still on the ground, the system takes over its controls before takeoff, denying flight altogether.

Airborne mitigation - The system takes over the drone's control and lands it safely at a predefined location.



System “hard kill” configurations

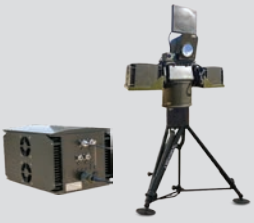
The Red Sky 2 system offers additional “hard kill” solutions with configurations that enable the use of missiles and machine guns.

TORC 30 - Advanced Air Defense Turret
The TORC 30 system includes “soft-kill” anti-drone, IR missiles and an accurate anti-aircraft cannon with cadence shooting up to 600 shots / minute. The system allows remote operation of a Rheinmetall MK30-2 / ABM 30mm cannon, mounted on an armored vehicle. The TORC 30 system is stabilized, allowing high-precision shots on-the-move.

RSK-AD
The Red Sky 2 System is classified as VSHORAD (Very Short Range Air Defense), configured to utilize the full range capabilities of MANPADS missiles. The solution increases mission hit probability and provides combat forces with enhanced flexibility in low-layer air defense missions. The solution can be adapted to use IR MANPADS missiles such as GROM, IGLA-S, SA-16/14, Mistral or STINGER.

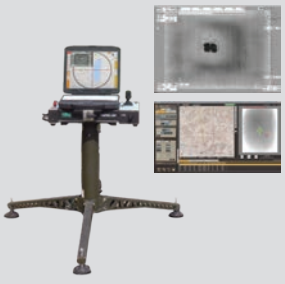
RSK-WAVE (WS)
Remote controlled weapon stations (RCWS) can be integrated with the Red Sky 2 system’s control unit, improving weapon and machine gun accuracy. The system features “smart shooting”, triggered only after target verification, connects to the C⁴I system, and is easily installed without penetrating the platform. The solution provides jamming capability against hostile drones.

Radar system (RS)



Tracing and jamming (TJ)

Multi-directional (MD) unit



Central control unit (CU)

RF detector and Drone Neutralization System (DNS)

Air Defense Solution

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Key Benefits

- Combines unique and powerful aerial radar detection
- Rogue drone override and forced safe landing
- Virtually zero false alarms
- Operational flexibility
- Rapid deployment
- 24/7 day/night and all-weather operation
- Single operator

Key Features

Multi-directional (MD) jammer:

- Effective coverage of detection: Up to 1500m, 360°
- Reactive jamming system: Triggered by RF continuous aerial scanning

Jamming range:

- Up to 300m radius using omnidirectional antennas
- Up to 800m cone using panel-directional antennas
- Alerts: SMS & voice alert
- Water resistant: Pelican outdoor casing
- No interference to nearby frequency bands

Radar system:

- Frequency: X-band
- Multi-beam elevation coverage
- Tracing and jamming (TJ) system:
- Electro-optic thermal day/night observation system
- High-power reactive jammers

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