



# D-Fend Solutions' Long-Range Directional Kit

## LONG-DISTANCE CHALLENGES REQUIRE A LONG-RANGE SOLUTION

Vast expanses, such as [airports](#) and [borders](#), require long-distance coverage.

Fears of a drone colliding with a plane, or being used for a terror attack, have many airport security teams searching for suitable counter-drone technologies. Securing airports and controlling the risk of another drone-related closure, interruption or terror attack is crucial.

Some mitigation methods – such as jamming or kinetic methods – are not suitable for airports, as they may disrupt necessary navigation and communication systems or cause collateral damage.

International border surveillance and protection requires an effective and proven counter-drone solution to detect, track and take over unauthorized drones involved in smuggling contraband, human trafficking, or surveillance. Existing communication signals operating on the same frequency bands (Wi-Fi and point-to-point communications) could be adversely affected by some types of counter-drone measures.

D-Fend Solutions' **Long-Range Directional Kit** is designed primarily for stationary, long-range coverage deployments, such as protecting airport and border airspaces.

## Main Features & Benefits

- **Unique sensor solution**, protecting spaces such as border lines and approaching and take-off air corridors, often referred to as obstacle limitation surfaces (OLS)
- **Easy deployment** pole-installation bracket, to which the directional sensor is secured, designed to withstand extreme environmental conditions.
- **Detection & mitigation** for sensitive airspace areas
- **Certified**, IP65-compliant ultra-wide band antenna, IP67-compliant Wi-Fi antenna

## Main Components

- **Stationary, ultra-wide band antenna** unit, designed for fixed, stationary deployment on a pole, providing 30°- 60° azimuth coverage (RF-band dependent) and 30° elevation, extending the directional coverage range to longer distances
- **Directional dual-sensor** secured to an easy deployment pole installation bracket for the SDR unit and stationary antenna, supporting pole diameter of 60-120mm
- **Multi-pin, wide frequency RF cable**, connecting the SDR processing unit to the stationary antenna and GPS port
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- Compatible with separately purchased **Multiple Sensors Command & Control (MSC2)**, designed to control multiple EnforceAir sensors remotely, enabling system configuration, and drone mitigation capabilities from a single server incorporating a unified and aggregated view



## Operational Flexibility for The Most Challenging Environments

Drone threats vary by mission, use case and environment, so D-Fend Solutions offers multiple deployment options, providing optimized coverage for a wide variety of scenarios, conditions, and terrain types, with rapid and easy set-up. Our EnforceAir flagship system can be affixed to vehicles or ships, covertly if necessary, or set up as stationary deployments on low or high ground. The hardware is lightweight and compact, and can be rapidly taken apart, moved, and reassembled in minutes.

## Specifications

Electrical Specifications	
Operating Frequency	<b>UWB antennas</b> 433MHz, 915MHz, 2.4GHz, 5.8GHz <b>Wi-Fi antennas</b> 2.4GHz, 5.8GHz
Gain	<b>UWB antennas</b> 8 dBi (typical) <b>Wi-Fi antennas</b> 12.5±1.0dBi
VSWR	<b>UWB antennas</b> <2.0:1 <b>Wi-Fi antennas</b> 1.5:1 (typical), 2.0:1 (max)

Electrical Specifications			
Main Lobe Width	Antenna	EL beamwidth (typical)	AZ beamwidth (typical)
	UWB antennas (3db)	50°	60°
	Wi-Fi antennas (6db)	2.4GHz at 35° 5.8GHz at 20°	2.4GHz at 75° 5.8GHz at 30°

Element Resistant Specifications	
Wind speed	160 km/h
Vibration	Comply to MIL-STD-810G
Salt resistant	Comply to MIL-STD-810G
Operating Temperature	-30° to +50°C
Humidity	Comply to MIL-STD-810G
Ingress Protection	Antennas – IP65 SDR – IP66

Mechanical Description			
Weight & Dimensions	SDR Unit	37 lbs/16.8 kg	17x17x5 in/44x43x12 cm
	Directional Antenna Array	88 lbs/40Kg	35x45x71 in/90x115x181 cm
Antenna Array Elements	4 x Ultra-wide-band antenna 4 x Dual band Wi-Fi 2.4/5.8 GHz antenna 1 x GPS Antenna		

