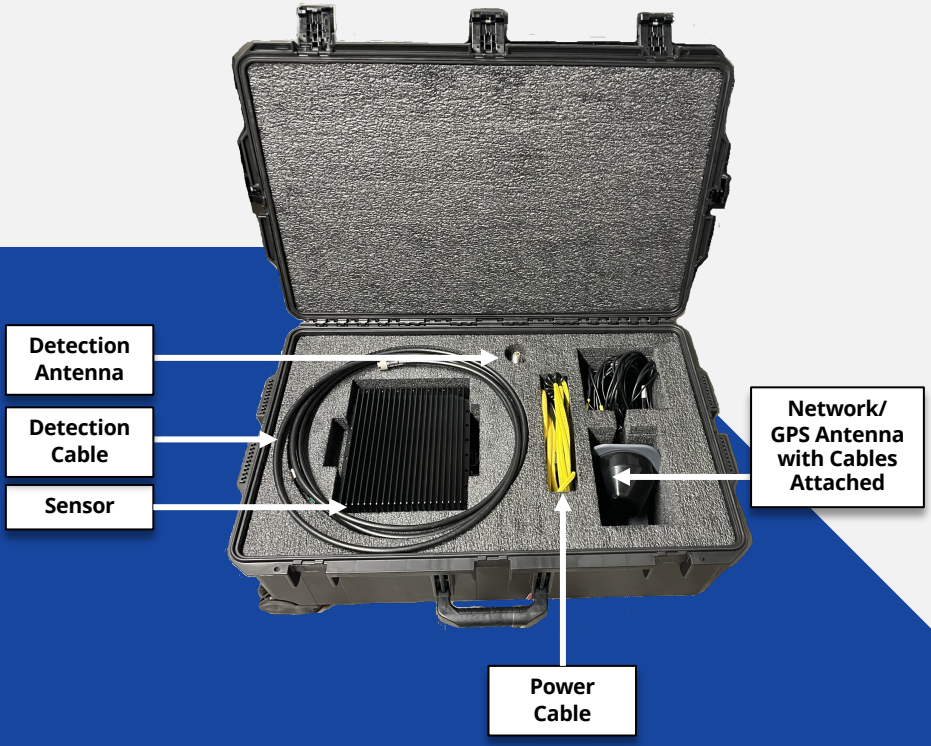
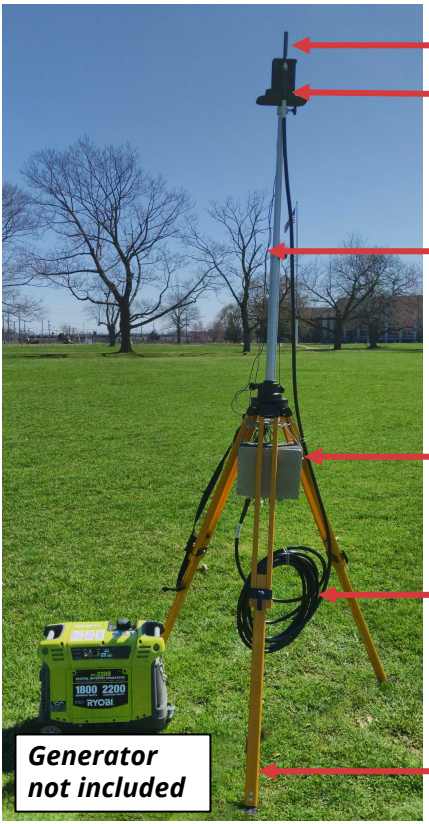
AeroDefense
RELIABLE DRONE DETECTION

AeroDefense AirWarden™ Mobile Drone Detection System

Quick Start Guide



SYSTEM COMPONENTS



Detection Antenna

Network/GPS Antenna

Network Cables *(Attached to Network/GPSA ntenna)*

Sensor

Detection Cable

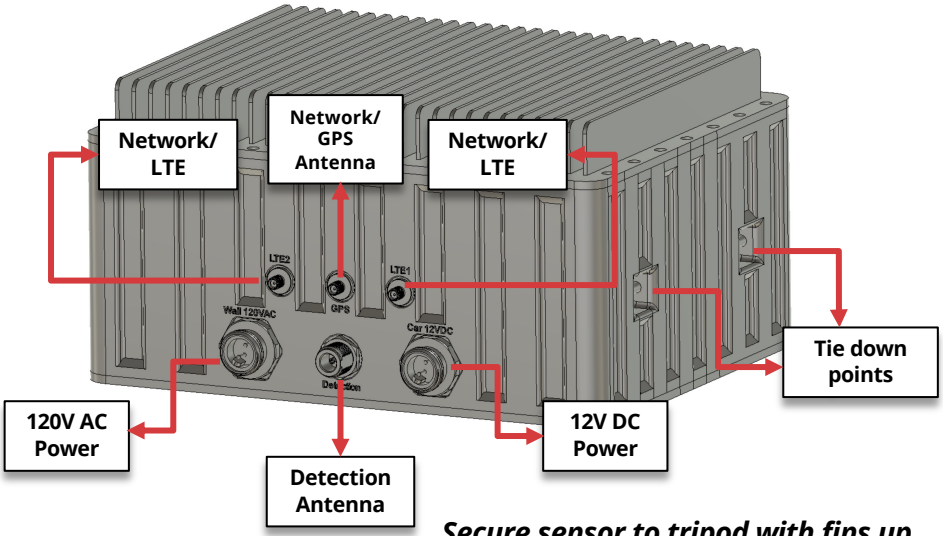
Tripod

Power Cable *(not shown above)*

FIRST TIME USE INSTRUCTIONS

1. Receive shipment and verify no damage
2. Activate Verizon or AT&T SIM associated with your sensor (SIM Serial Number provided by AeroDefense)
3. Ensure SIM cards are set to a static public IP address with the carrier
   - When you activate the SIM, you must request a “Static Public IP Address” for the system to function
   - SIM serial numbers are listed on a sticker on the sensor electronics
4. Provide AeroDefense the FG number, activated SIM serial number, and the assigned IP address each sensor is associated with

PHYSICAL SET UP



Secure sensor to tripod with fins up or vertical (using rope or zip tie)

PLANNING SENSOR LOCATIONS

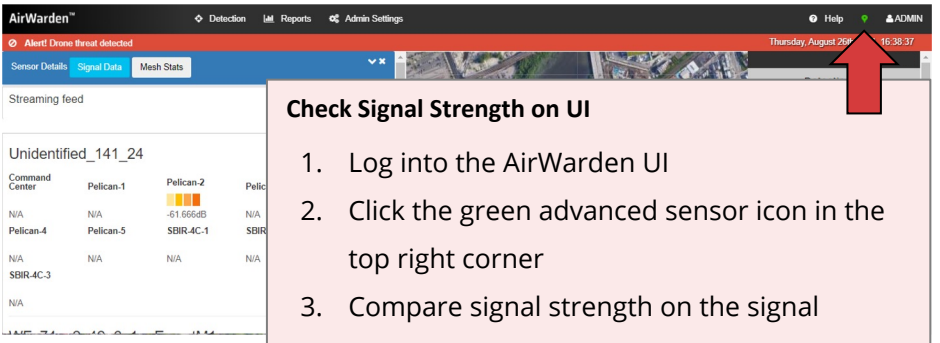
	Design a square or grid pattern (no concave shapes) – Try for an equilateral triangle or square
	Confirm no nearby transmission equipment that could interfere w/ AirWarden RF sensors
	Place sensors ~350 yards apart
	Confirm power outlets are live
	Ensure good line of sight to desired coverage area
	Verify LTE coverage of four (4) bars is available on a device with the same carrier i.e., cell phone or tablet
	Prevent critical blind spots & highlight acceptable blind spots
	Ensure that equipment can be safely secured
	Consider power, network & mounting requirements •120V AC power •Good cell service •Ability to mount antenna for good line of sight

INITIAL SENSOR SETUP

1. After installing the sensor, check the connections are secure and test with a drone and controller
2. Stand approximately 10 yards away from receive antenna and face away from it
3. Power on a drone and controller pair
4. Verify on the UI that the sensor is detecting the signal at full strength (5 bars)

Note: Make sure the signal being compared is the expected signal from the drone/controller.

It may help to set a specific channel on the drone if the environment is noisy.

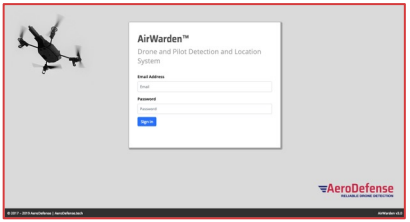


Check Signal Strength on UI

1. Log into the AirWarden UI
2. Click the green advanced sensor icon in the top right corner
3. Compare signal strength on the signal strength tab to expected values

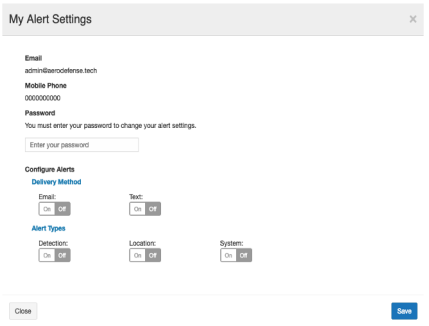
*In noisy environments when the sensor is detecting many signals, it will be easier to set the frequency the drone is operating on to ensure the installation check is accurate.

USER INTERFACE LOGIN



Your system administrator can provide the login URL.

ALERT SETTINGS



Click your email address in the top right corner of the screen to access your alert settings.

- **Delivery Method** – Specifies how alerts are received, Text and/or Email. Text alerts can only be received if your mobile number has been added to the system.
- **Alert Types** – Indicates the types of alerts you will receive
  - **Detection** – When a drone or controller is detected and when airspace is clear
  - **Location** – Continuous location updates when a drone/controller is detected
  - **System** – When a sensor goes offline unexpectedly and when it recovers

The color scheme used upon first login is the default. Users who are visually impaired can switch to Colorblind Mode from within the **Preferences** section (click your email address in upper right-hand corner, choose Preferences, and look for Colorblind Mode under Accessibility Options).

SYSTEM CALIBRATION

For now, system calibration will be performed with AeroDefense assistance. Soon, this process will be automatic.

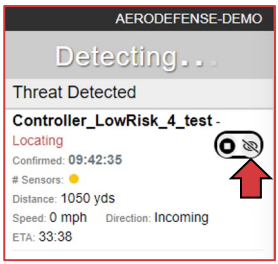
Environmental

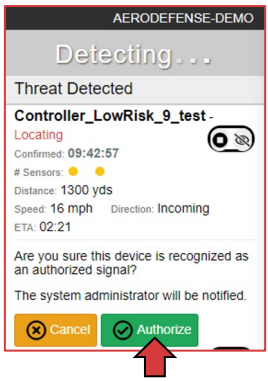
– Temporarily authorize allowable, non-threat signals
  - Metal detectors, Industrial remote controls, RF controlled friendly devices

Temporary Signal Authorization (From Detections/Home Page)

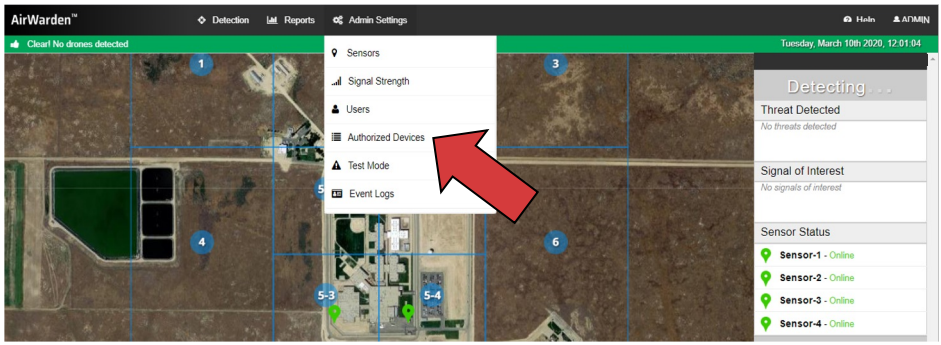
Device signals can be temporarily authorized from the sidebar during a live detection. Length of temporary authorization is configurable.

The ability to authorize the device will show up under “Signal of Interest” or “Threat Detected” in the sidebar.

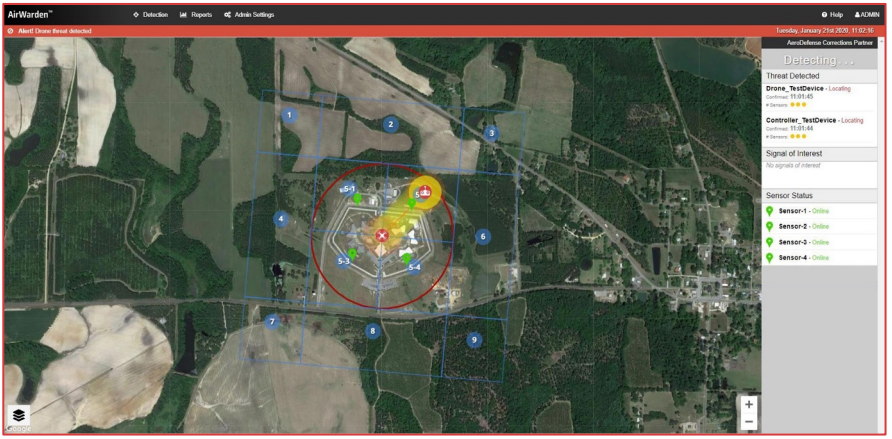




Permanent Signal Authorization (From Admin Settings → Authorized Devices



DETECTION STATUS



Clear! No drones detected

- No drones being detected

Analyzing signal of interest

- Analyzing detected signal to determine if it is a potential threat.
- No data will display on the map. Device ID (signal name) displays in the sidebar.
- No action is required.

Signal of Interest

Controller_IRIS_3DR – **Analyzing**
First Detected: **11:36:56**

Alert! Drone threat detected

- Confirmed the signal may be a potential threat and calculates its location.
- Sidebar displays Device ID (signal name) along with the time the signal was confirmed as a potential threat, how many sensors are detecting it, distance, speed, direction, and ETA.
- Location of device is displayed on map.
- Alerts are sent and investigation is required once the device has been located on the map.

Threat Detected

Controller_IRIS_3DR – **Locating**
Confirmed: **11:37:22**
Sensors:
Distance: 300 yds
Speed: 0 mph Direction: Holding
ETA: 00:00

DETECTION ICONS

(Hover over a drone, controller, unidentified, or low risk icon on the map to view its ID)

Controller

Drone

Unidentified

Low Risk

Start Location

Trailing Line

Projection Line

SYSTEM TROUBLESHOOTING

Issue	Resolution
Unable to load AirWarden UI login screen	✓ Check the network on your device ✓ Confirm URL is typed correctly
Unable to successfully login	Contact system administrator
Sensor not coming online	✓ Ensure the sensor is plugged in to power outlet and the outlet delivers power ✓ Ensure the network antenna is securely plugged into the sensor ✓ Ensure there is LTE coverage for the antenna location for the carrier used by the sensor (LTE sensor only) ✓ Unplug sensor for 10 seconds and power back up ✓ Move network antenna (sometimes a few feet will get better cellular coverage)
Sensor not getting GPS updates	✓ Ensure GPS element of the network antenna is securely connected to the sensor ✓ Move network antenna to a location where it has better GPS signal ✓ Restart sensor
Sensor showing error on UI	✓ Restart sensor from UI
If issues cannot be resolved, contact AeroDefense **732.284.3853** **help@aerodefense.tech**	

INSTRUCTION TO THE USER

All antennas must be at least **20 cm** from users and nearby persons during normal operation.

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the Federal Communications Commission (FCC) Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.