

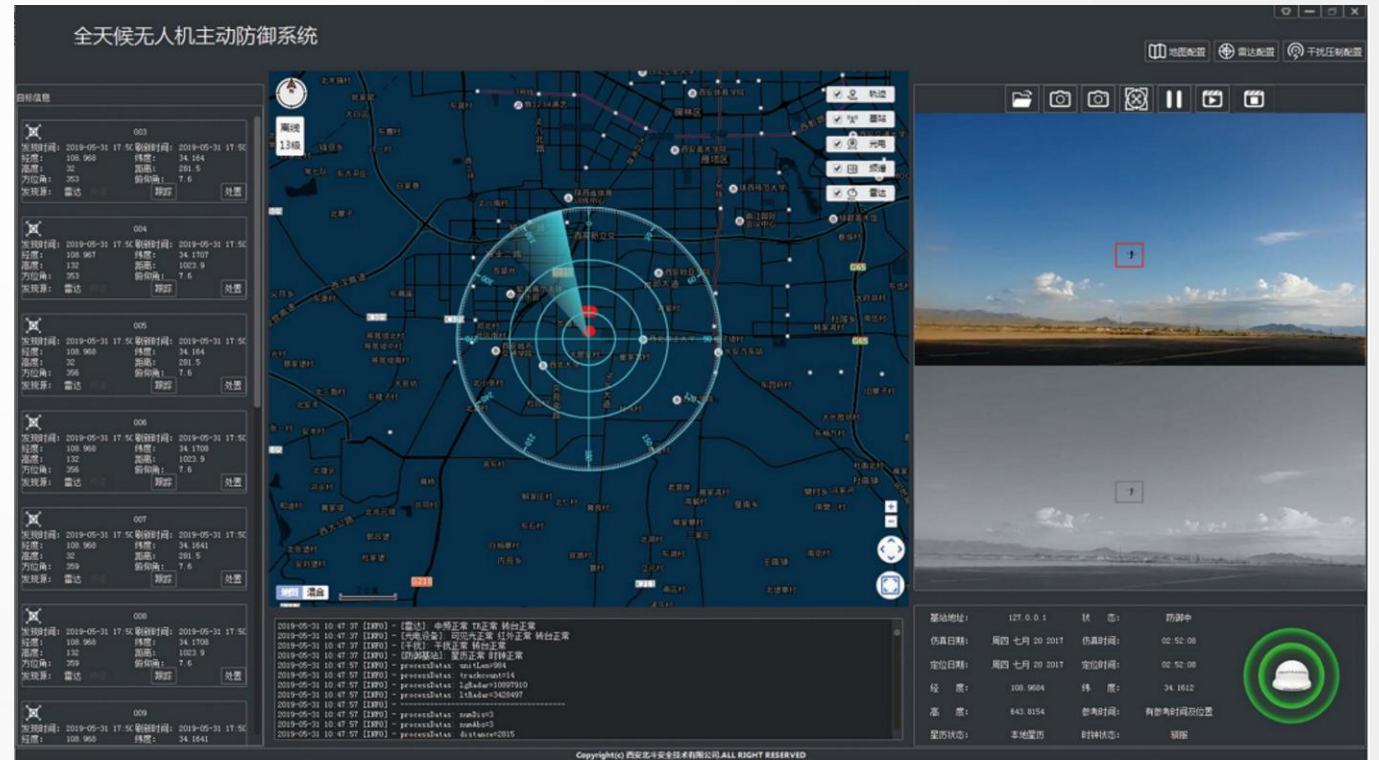
Anti-UAV Systems



PART I UAV Active Defense System (UADS) Introduction

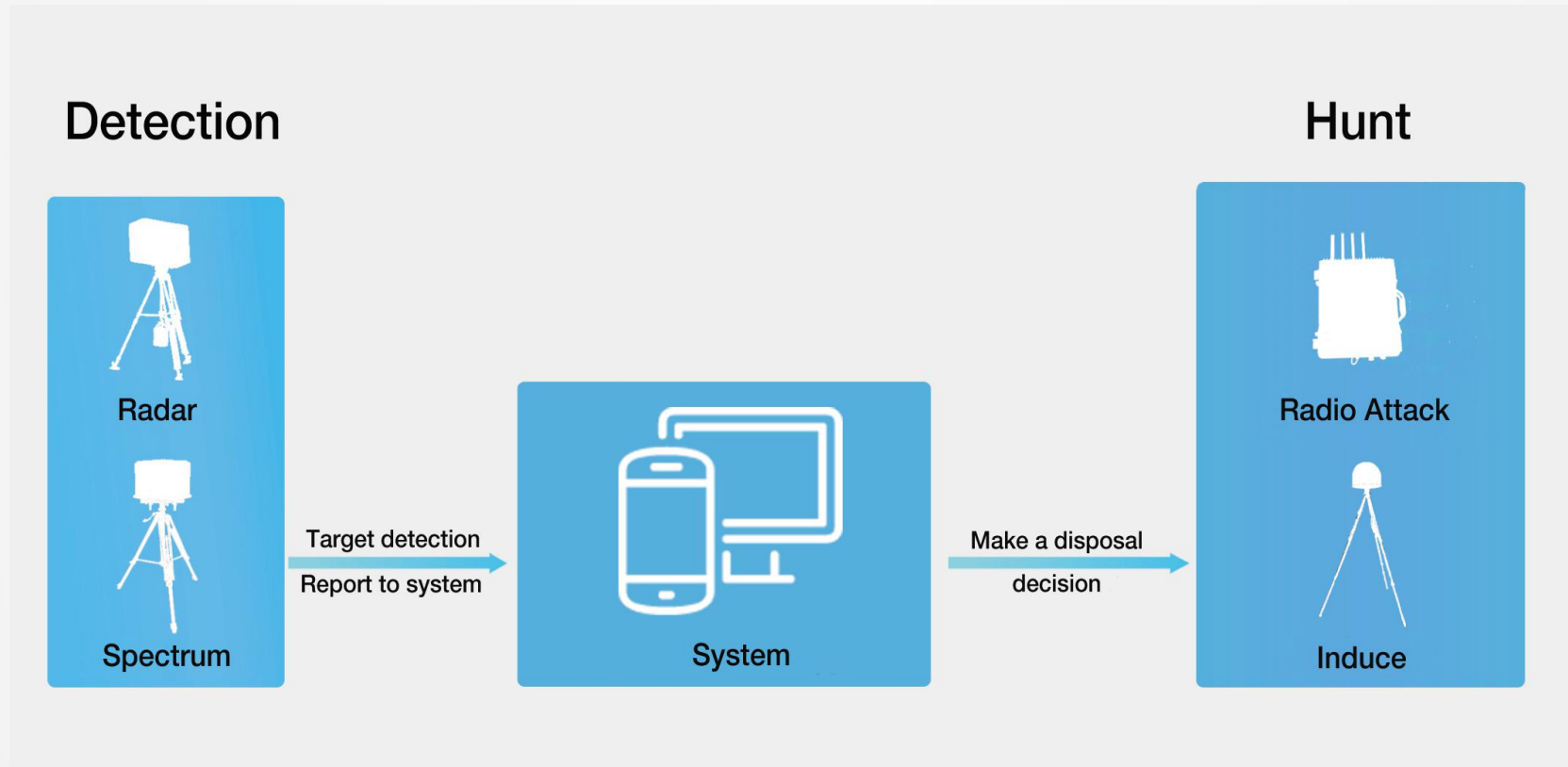
The **UAV Active Defense System (UADS) solution** is jointly developed by SALUKI Technology and Beidou Open Lab. It integrates a variety of *UAV Detection devices* and *UAV Hunting Devices*; can be flexibly configured according to different application scenarios to realize the detection, interference and blowing of the drones.

The system adopts plug-in development, supports multi-radar, multi-spectral detection, multi-optical tracking, multi-interference rejection, multi-navigation defense base station equipment access, 360° no blind zone, in all-weather condition, all-day, all-round Integrated management system.

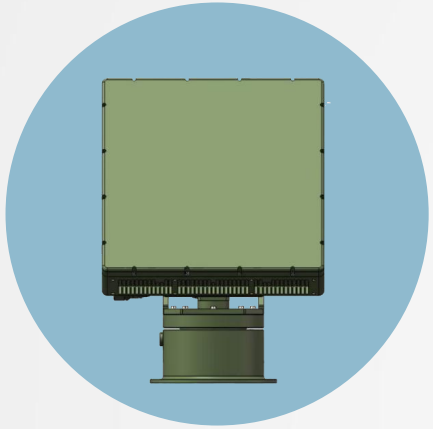


PART I Overview UAV Active Defense System (UADS)

The UAV Active Defense System consist 2 phases: a) **Detection** - Radar scanning, RF Spectrum Monitoring and b) **Hunting** - Interference rejection, Radio Attack Device. It takes intelligent security detection and establishes a management control system covering the entire regulatory airspace.



PART I 5KM Spoofing Full System



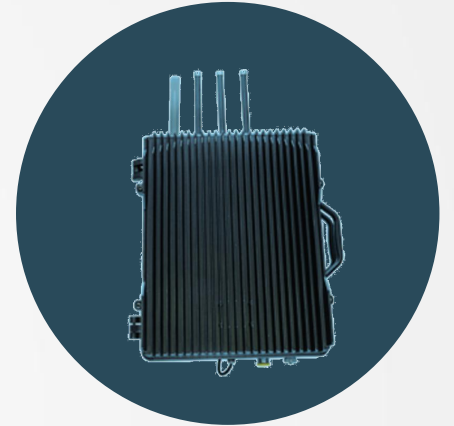
Radar



**RF Spectrum
Monitoring**



**Navigation Guidance
Defense**



Radio Striken

Target
Detection

Report to
Control
Center

Make a
Disposal
Decision

Inteference
or Hunting

The ADS-2202 series radar products are short-range low-altitude surveillance radars, which can accurately scanning small flying object and displaying the distance, azimuth, pitch, speed and altitude of the target. Multidimensional information such as intensity forms a three-dimensional motion situation of low-altitude targets.

Features:

- **The capability to get information:** track multiple targets simultaneously and detect the speed, trajectory and spatial position of the target in real time.
- **The capability of strong anti-clutter:** integrating multiple strong anti-clutter algorithms.
- **Wider airspace coverage:** active phase array antenna is used to realize the coverage of the whole airspace.
- **Environment adaptability:** small size, light weight, reserved for a variety of interfaces, wireless interconnection capability based on 4G, high stability and reliability.
- **Low cost 2D-electronically scanning antenna:** Separation of air-ground target.
- **Rapid response:** set up and withdrawal time <2 minutes.



Standard Configurations:

- Radar host (including battery)×1
- Battery module charger ×1
- Trolley case ×1
- Operation terminal ×1
- Tripod×1

System	Active Phased Array
Distance	5km
Target size RCS	0.01
Distance accuracy	10m
Speed range	3-80m/s
Speed measuring precision	2m/s
Distance resolution	5m
Azimuth resolution	6°
Azimuth accuracy	1.5°
The resolution of pitching angle	3°

The accuracy of pitching angle	0.5°
Data rate	≤7s
Blind region	200m
Frequency control ability	Yes
Parameter adjustment ability	Yes
Networking ability	Yes
Radar System	Phase-scanned
Range of pitching angle	20°
Distance blind area compensation	No
Output interface	UDP/RS232

The ADS2201A device is used for real-time monitoring, analysis and directional finding of the flight control signal, image transmission signal and navigation signals of civil UAV(frequency range: 400MHz - 6GHz). It can track the flight path of the UAV by multi-station system.

Features:

- Integrated with antenna and receiver module.
- Low Power consumption and long hours operating.
- Automatic detection and direction finding of frequency-fixed and frequency- hopping signals.
- Small size, light weight, easy to set up and remove.

Frequency	400MHz - 6000MHz(Can be customized based on requirement)
Detect distance	5km (0.1W Transmission Power>0.1W)
Detect distance	5km (0.1W Transmission Power>0.1W)
Lightning protection method	Build-in Lightning protection module.
Detect angle	360°
Power	220V AC, ≤100W
Dimension	450mm x 450mm x350mm
Weight	≤10Kg
Working temperature	-40°C to 65°C



Standard Configurations:

- Direction finding host×1
- Tripod ×1
- Cable ×1
- Power adapter×1

The device simulates real satellite navigation signals with high accuracy controls of the UAV navigation system and induces the flight control system to generate wrong flight control instructions. Besides, it can reset new trajectory of the UAV and guide the target to the predesigned position by the user.

Features:

- Guiding the UAV to the any predesigned position by the user.
- Suitable for stationary or vehicle-mounted movement.
- Provide unaffected coordinate positioning and high precision timing data.
- Compact and easily integrated.

Size	610x470x330mm
Weight	40kg
Deception system	GPS/GLONASS/BDS optional
Effective time	≤5s
Fixed-point induction accuracy	error ≤50m (Continuously Guidance of Radar)
Fixed-point control mode	automatic
Affective distance	≥5km (configurable, up to 30km)
Coverage	omnidirectional/ directional
Initialisation time	15min
Continuous working time	7×24 hours
Power supply mode	110 - 220 VAC
Power consumption	≤30w



Standard Configurations:

- Control host ×1
- Control software ×1
- Guide antenna×1
- Transmitting antenna ×1
- Tripod×1

The device can achieve high-efficiency interference drive away from targets with a radius of 0-5KM. According to the target precise coordinates (Azimuth, Distance, Height) input by the detection device.

The target discovery software can confirm the target, intervention target by manual and unattended operation mode.

Features:

- Omnidirectional interference of 0-360 degrees.
- Reserving the detection device interface, which can be extended for linkage use.
- It can be used independently for 7x24 hours and high reliability.
- The multi-band omnidirectional beam jammer can perform complex interference suppression on the positioning signal, the picture transmission signal and the remote control signal as needed.
- The small, high-gain omnidirectional antenna is designed to ensure power signal output, realize low-power long-distance low-radiation transmission.
- Environmentally friendly..

Working frequency	GPS\GLONASS\BDS, 2400MHz, 5800MHz, 433 MHz, 900MHz, 1200MHz, 1400MHz (Customized)
Distance	1-5km (Customized)
Antenna	Omnidirectional or Directional
Size & Weight	531x476x270mm (without antenna), 28kg
Working condition	220V AC, -35°C-65°C



Standard Configurations:

- The host (antenna and transmitter)×1
- Rotary table ×1
- Power ×1



Active Guarded Device



Portable Interference Device

The Saluki UAV Active Guarded Device System is consist of Base Station Active Guarded Device and Portable Interference Device.

Each of equipment can be used separately and no additional installation equipment needed such as radar scanning or radio frequency monitoring.

The device can be deployed in all-weather condition, all-day continuously service , set up no-flying zone for UAVs according to the scale and induce flight control by generating departure and return flight control of the unknown civilian UAVs.

Features:

- Sensitive in control and quick response.
- Light-weight, portable type and ease to operate.
- Emitting multiband electromagnetic interference and control different frequency bands.
- The guardian range is adjustable and it can be combined with multiple units to increase the guardian zone.
- Able to integrate with existing security system, three-proof design and anti-surged.
- Support the access of spoof signal, operate in all-weather condition , all-time continuously defense service.

Working frequency	1.2GHz - 1.6GHz
Effective distance	≤1000m (without occlusion)
Signal transmitting power	1mW
Power consumption	50W
Start-up time	<5min

Size	Φ536mm x 300mm
Weight	10kg
Power	110V-220V, 50Hz-60Hz
Monitoring interface	Ethernet, RJ45
working temperature	-20°C to + 50°C
Relative humidity	95%



Standard Configurations:

- Base station unit (built-in control software) ×1
- Monitoring software ×1

The device transmits interference signal by directional antenna to block and interfere drone control signal, image transmission signals and satellite positioning signals, so as to force the drone to land, hovering or turn back.

Features:

- Portable type and full-band frequency coverage.
- It can control various bands which are used by civilian UAV.
- High gain directional antenna and efficient electromagnetic protection.
- One-key operation, low-voltage alarm and temperature protection.
- Low cost with 2D-electronically scanning antenna and separation of air-ground target.
- Removeable battery module and easy to replace.



Operating frequency	2.4GHz, 5.8GHz, GPS/GLONASS/BDS
Transmitting power	≤10W
Effective distance	2km
Continuous Working time	1 hour
Battery capacity	3500mAh
Size & Weight	316mm×145mm×211mm, 3kg (including battery)
Antenna front-to-back ratio	23dB
Interfere target	Consumer UAV

Standard Configurations:

- Electron gun (including high-gain and multi-band Compound antenna, battery)×1
- Auxiliary inspection mirror ×1
- Battery module charger ×1
- Portable suitcase×1

Thanks !

