

C18 Low-Altitude Surveillance Radar

Specification Sheet



The C18 low-altitude surveillance radar is a three-dimensional radar system capable of integrated air and ground detection. It can quickly detect and continuously track targets such as drones, aircraft, and birds, while simultaneously monitoring ground targets like personnel and vehicles, as well as water surface targets such as vessels.

Utilizing simultaneous multi-beam technology and high-performance signal processing techniques, this radar can rapidly and accurately acquire target position and motion states even in complex, dense multi-target environments. The radar employs a continuous wave operation mode with low transmission power,

significantly enhancing its resistance to electromagnetic interception compared to pulse-based systems.

Within a cooperative detection system, this radar can serve as the core sensing unit, providing high-precision target data to other sensors (such as electro-optical devices, bird dispersal equipment) to achieve precise guidance.

This radar is suitable for widespread application in various fields including vital area protection, the low-altitude economy, airport bird detection, air traffic control, and border/coastal defense.

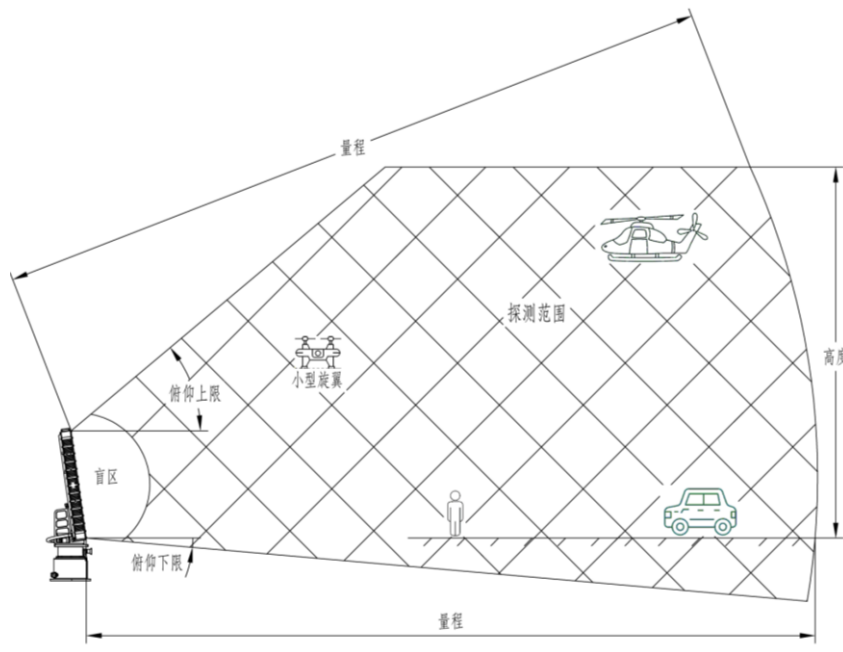
I. Product Features

- **High Detection Accuracy:** Leveraging advanced signal processing algorithms and system hardware architecture, the radar demonstrates excellent accuracy in measuring range, velocity, azimuth, and height. It provides stable and precise sensing data for command decision-making and target tracking/countermeasures.
- **Large-Capacity Wide-Area Detection:** The radar employs mechanical azimuth scanning and elevation Digital Beam Forming (DBF) technology, achieving extensive coverage of 360 °in azimuth and 64 °in elevation. Supported by a high-performance signal processor, it enables real-time detection and tracking of up to 300 moving targets across the entire field of view, capably handling large-area, multi-target complex scenarios.
- **High Refresh Rate & Precise Tracking:** Operating at a high refresh rate of 180 %s (upgradable to 360 %s maximum), and utilizing advanced tracking filter algorithms, the radar significantly enhances its tracking capability for high-speed, highly maneuverable targets.
- **High Detection Sensitivity & Low False Alarm Rate:** Through sophisticated clutter suppression technology, the radar effectively extracts weak target signals in challenging electromagnetic environments characterized by strong ground

clutter or weather clutter, while maintaining an extremely low false alarm probability, significantly improving radar efficiency.

- **High Safety:** Features low radiated power, only a fraction of that of pulse radars. Effectively enhances operational safety for nearby equipment and personnel.
- **Simple Operation & Portability:** Featuring an intelligent human-machine interface design, the radar is quick and easy to learn. The hardware utilizes a lightweight, modular structural design, enabling rapid deployment and retraction, supporting high-mobility operations.

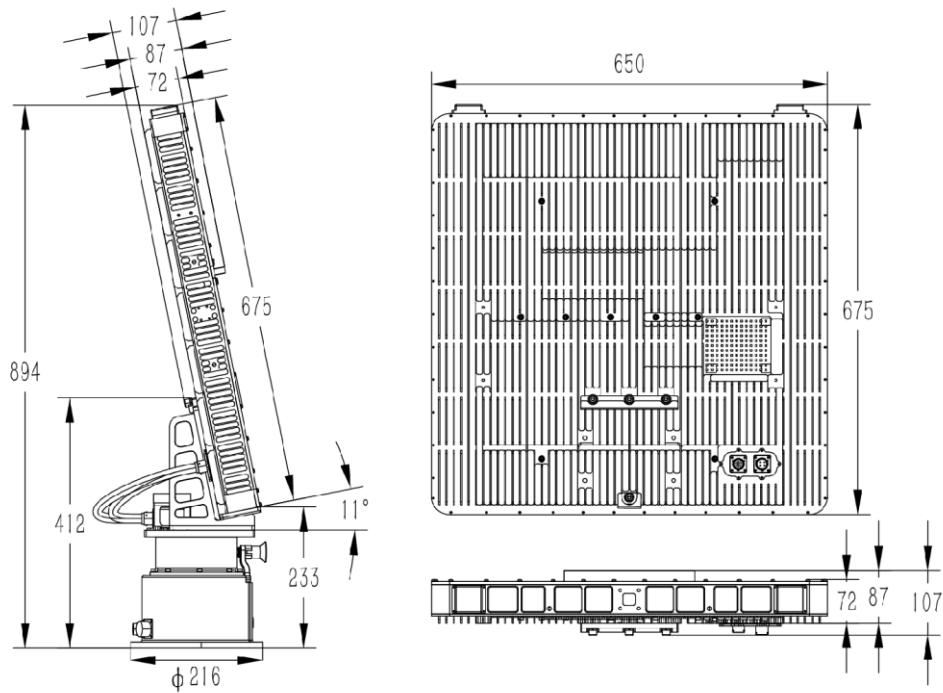
II. Product Specifications



1. Operating Band: X-band
2. Number of Frequency Points: 4
3. Technology: Mechanical Azimuth Scan + Elevation DBF
4. Measurement Range
 - ① Detection Range: 15km
 - ② Maximum Detection Altitude: 2000m
 - ③ Blind Zone: 50m
 - ④ Azimuth Coverage: 360 °
 - ⑤ Elevation Coverage: -4 °~ 60 °

- ⑥ Velocity Measurement Range: 1-150m/s
5. Detection Range
- ① Small UAV (RCS=0.01m², DJI Phantom 4): ≥8km
- ② Medium UAV (RCS=1m²): ≥15km
- ③ Car, Chopper (RCS=5m²): ≥15km
6. Measurement Accuracy (RMS)
- ① Range Accuracy: ≤5m
- ② Velocity Accuracy: ≤0.5m/s
- ③ Angle Accuracy: ≤0.4° (Azimuth), ≤0.4° (Elevation)
7. Refresh Rate: 2s (30rpm, standard), 3s (20rpm), 1s (60rpm, upgradeable)
8. Simultaneous Tracking Capacity: ≥300 targets
9. Environmental Adaptability
- ① Operating Temperature: -40°C ~ +55°C
- ② Operating Humidity: ≤90%
- ③ Protection Rating: IP66 (Radar Host: IP67)
10. Interface/Power Supply
- ① Power Supply: DC 36-52V (supplied with AC220V-DC48V adapter)
- ② Power Consumption: ≤330W
- ③ Communication: Ethernet (Circular Aviation Connector)
11. Size/Weight: ≤35 kg (Host + Pedestal)

Item	Dimensions (mm)	Weight (kg)	Packed Dim (mm)	Packed Wt (kg)
Host Unit	≤655*680*115	≤19	≤790*740*230	≤35
Pedestal	≤412*Φ225	≤14	≤360*360*480	≤22
Tripod	≤940*230*230	≤12	≤1140*290*290	≤15

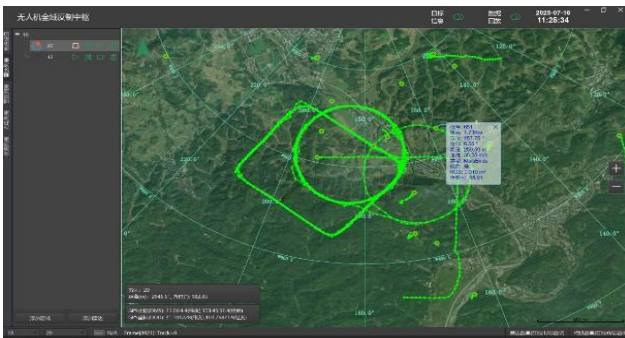


III. Product List

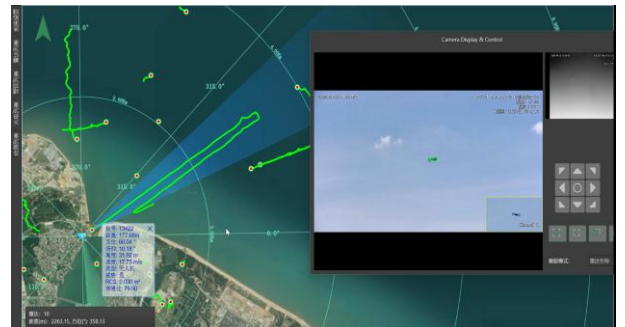
No	Name	Qty	Unit	Description
1	Radar Host Unit	1	Unit	
2	Radar Pedestal	1	Unit	
3	Tripod	1	Unit	
4	Radar Main Unit Transport Case	1	Unit	Aluminum Alloy Transport Case
5	Radar Turntable Transport Case	1	Unit	Aluminum Alloy Transport Case
6	Power Adapter	1	Cable	AC220V to DC48V, Length 15m
7	Communication Cable	1	Cable	Connects Radar to Display & Control Terminal, Length 15m
8	Assembly Tools & Screws	1	Set	For assembling Host, Pedestal, Tripod
9	Demo Display & Control Software	1	Copy	Executable file (.EXE)
10	Documentation	1	Copy	User Manual, etc. (Electronic

				Version)
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IV. Product Applications



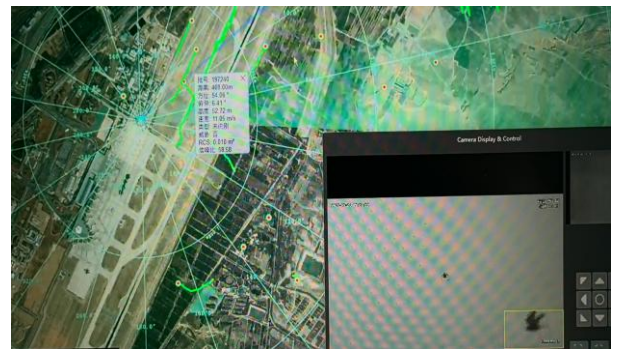
Radar Detecting Small UAVs



Radar and Camera Coordinated Detection of Sea Surface UAV



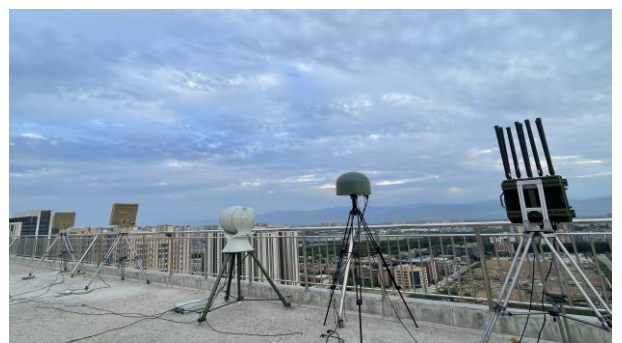
Radar Detecting Sea Surface UAVs



Radar and Camera Coordinated Airport Bird Detection



Vehicle-mounted Deployment



Counter-UAV System (Radar + Camera + Spectrum + Jamming)