

Micro-Doppler Signature and Flight Path Feature Detection Ku-band Medium-range Monopolar Array Radar Anti UAV Radar

Our Product Introduction

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Basic Information

- Place of Origin: China
- Brand Name: MYT
- Certification: CNAS、CMA、CAL、ILAC-MRA
- Model Number: DD-R21
- Minimum Order Quantity: 1
- Price: Pricing is negotiable based on order quantity
- Delivery Time: 10 work days
- Payment Terms: L/C,T/T
- Supply Ability: 1000units per month



Product Specification

- Detection Range: $\geq 5\text{Km}$ RCS:0.01m² unmanned Aerial Vehicle $\geq 10\text{Km}$ RCS:0.3 M² unmanned Aerial Vehicle
- Fade Zone: $\leq 150\text{m}$
- Work Pattern: 2D Phased Array
- Supply Electricity: AC220V/DC24V
- Trace Function: TAS Feature Available
- TAS Tracking Target Count: ≥ 6
- Resolution Ratio: Distance: $\leq 15\text{m}$, Azimuth: $\leq 6^\circ$, Elevation: $\leq 4^\circ$
- Minimum Detection Altitude: $\leq 10\text{m}$
- Velocity Range: 1m/s~100m/s
- Target Update Rate: TWS: ≤ 3.5 Seconds (30° Pitch Coverage, 7.5km Range) TAS: $\leq 0.5\text{s}$ (default)
- Joggle: RJ45 Network Port
- Power Dissipation: $\leq 350\text{W}$
- Highlight: **Ku-band anti UAV radar,**

Ku-band medium-range single-faced array radar

1, Overview

The DD - R21 Ku - band medium - range monopolar array radar is a highly sophisticated piece of equipment. It integrates a fully solid - state, fully coherent, and pulse Doppler system. This system serves as a crucial enabling factor, endowing the radar with all - weather detection capabilities. Specifically, it is engineered to execute early warning functions for "low, small, slow" targets. Detecting such targets can be rather challenging due to their inherent characteristics.

To augment its detection and classification capabilities, the radar utilizes machine learning and AI recognition technologies. These technologies are grounded in two essential aspects: "micro - Doppler signatures" and "flight path features". By leveraging these, the radar can effectively detect and classify a diverse range of targets. This encompasses drones, which have become increasingly prevalent in various airspace scenarios. Light aircraft, helicopters, powered triplanes, airships, and airborne balloons are also among the targets that can be accurately identified. One of the most notable features is that it accomplishes this with extremely low false alarm rates, ensuring reliable performance.

The radar is also equipped with a unique two - dimensional phase scanning system. This system offers significant flexibility as it can be expanded into different configurations. For example, it can be configured as "azimuth mechanical scanning + elevation phase scanning". This specific configuration may prove advantageous in certain applications where a more detailed and targeted scanning approach is necessary. Additionally, it can be transformed into multi - polar arrays. These different configurations are of great significance as they can meet the diverse application requirements across various fields, whether for security monitoring, air traffic management in specific areas, or other related tasks.

2, Feature

The product possesses comprehensive target monitoring and analysis capabilities, enabling target positioning, trajectory display, and playback functions on the map while real-time presenting key parameters such as target distance, azimuth, elevation, and speed. The system features built-in data recording and storage functionality, which can completely save target trajectory data and equipment status information, supporting subsequent data playback and query operations.

Equipped with advanced AI recognition technology, the system employs "micro-Doppler signature" and "trajectory feature" analysis methods, enabling accurate classification and identification of various target types including drones, birds, humans, and vehicles. It integrates adaptive machine learning technology, allowing it to autonomously adapt to the current environment and start operation directly without manual parameter adjustment.

To ensure reliable all-weather operation, the system is equipped with cloud and rain noise suppression capabilities, effectively eliminating interference under adverse weather conditions. The software interface provides flexible parameter configuration options, allowing users to adjust settings such as elevation coverage, target update rate, and monitoring range according to their needs.

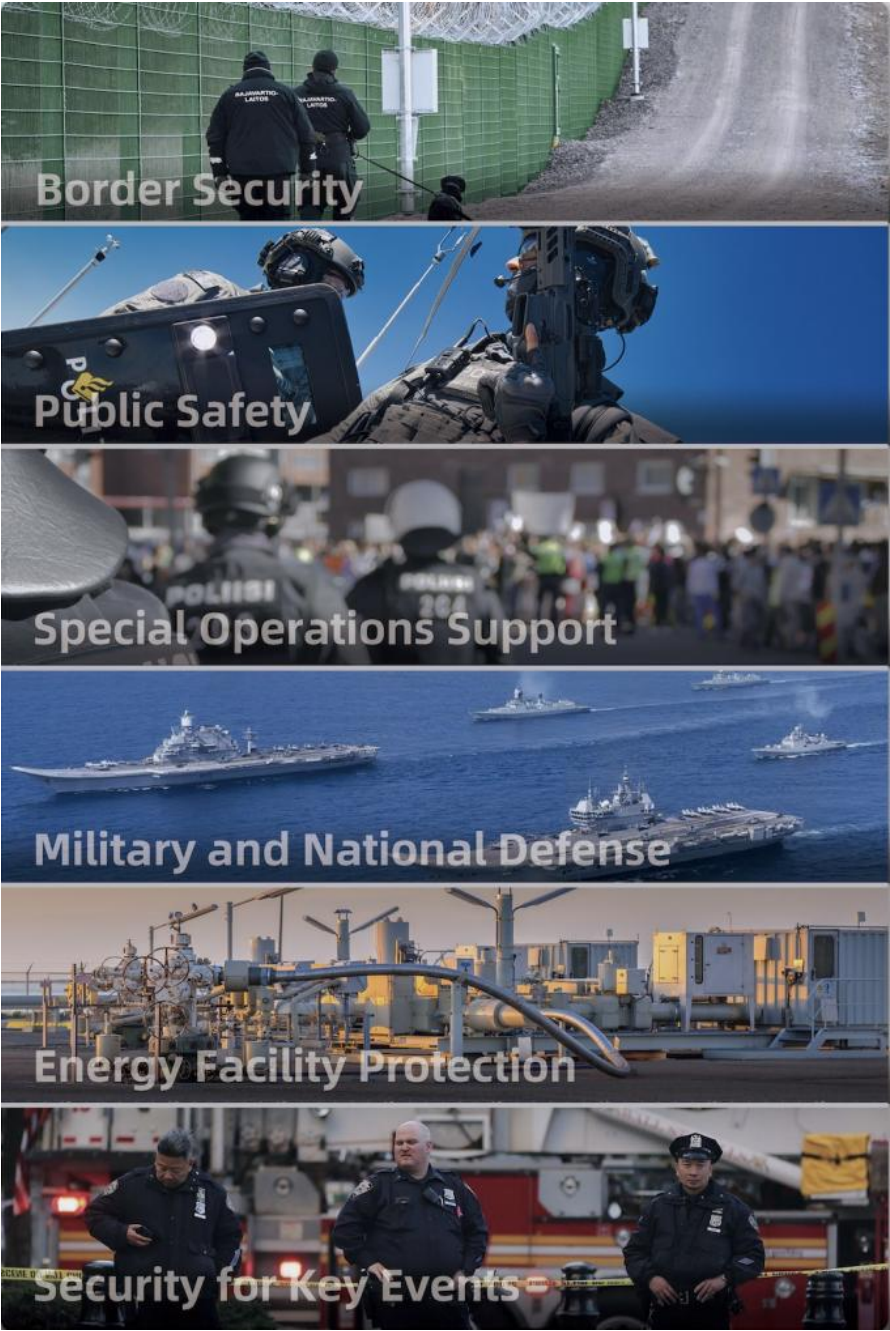
Additionally, the product features automatic compensation functions for independent positioning, orientation, elevation, and roll angles, ensuring measurement accuracy. During system operation, users can fully monitor equipment working conditions through real-time status monitoring functionality, ensuring stable and efficient system operation.

3, qualification

order number	parameter	metric
1	frequency range	Ku frequency range
2	detection range	≥ 5Km(RCS:0.01m2, unmanned aerial vehicle) ≥ 10Km(RCS:0.3 m2, unmanned aerial vehicle)
3	fade zone	≤ 150 m
4	work pattern	2D Phased Array
5	hunting zone	Heading: ±45°, Pitch: 0°~ 80° (configurable according to mission requirements)
6	trace function	TAS feature available
7	TAS tracking target count	≥ 6
8	Minimum detection altitude	≤ 1 0 m
9	velocity range	1m/s~100m/s
10	Target update rate	TWS: ≤ 3.5 seconds (30° pitch coverage, 7.5km range) TAS: ≤ 0.5s (default)
11	resolution ratio	Distance: ≤15m, azimuth: ≤6°, elevation: ≤4°
12	Search precision (RMS)	Distance: ≤10m, azimuth: ≤0.5°, elevation: ≤0.4°
13	Tracking accuracy (RMS)	Distance: ≤10m, azimuth: ≤0.4°, elevation: ≤0.3°
14	joggle	RJ45 network port
15	target capacity	≥500 batches
16	weight	≤ 13Kg (net weight of the device, excluding power supply/cable)

17	supply electricity	AC220V/DC24V
18	power dissipation	$\leq 35\text{ 0W}$
19	size	$\leq 337\text{mm} \times 317\text{mm} \times 137\text{ mm}$
20	operating temperature range	-40 + 70
21	levels of protection	IP66

4, Application Scenarios



5, Certification Certificate



6, Company profile

Chongqing Miao Yitang Technology Co., Ltd. is a specialized company engaged in anti-drone and unmanned intelligent defense management.

With the technical support from the AI Internet of Things Research Institute of the Chinese Academy of Sciences and collaborations with multiple intelligent AI companies, the company has established research laboratories for AI unmanned field products, accumulating a variety of technical patents.

The company's products are widely applied to unmanned automatic management solutions for various defense and perimeter areas, including AI anti-drone systems and AI unmanned vehicle patrol systems. These systems integrate with multiple technologies such as optoelectronics, radar, vibration, thermal imaging, facial recognition, and radio frequency management, truly achieving a 24-hour uninterrupted anti-drone defense and ground perimeter defense warning system. This allows for cost savings for clients, reduction in human resource allocation, and ensures the safety of clients' lives and property. The outstanding security system has won the company an excellent reputation and created higher value for its partners.



7, Customer Service

- 1). We offer 24 hours service after sales
- 2). If there are any usage or quality issues with the product, we provide online technical support to diagnose the cause of the problem.
- 3). Should you find the products unsatisfactory, kindly return it to us within a period of 3 months from the date of dispatch. Upon receipt and inspection, should the products be found to be free from any damage attributable to human factors, a full refund will be granted. Alternatively, we can engage in discussions to amend the product and subsequently reshipe the product to you.

CUSTOMER SERVICE

- * Fast and patient communication: professional sales reply immediately
- * Fast delivery: usually 2-7 days
- * Flexible Safe shipping: fast by air or sea with cheap freight
- * Customer-friendly: complete user manual and exact video training provided
- * After sales service: one year warranty and life time technical support



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