

Miniaturized, High-Energy Microwave Anti-Equipment System

1. System Survey

This system integrates the core technologies of high-energy microwave strike drone equipment and an optical tracking and targeting system, establishing a distributed intelligent defense architecture. The optical tracking and targeting system rapidly identifies target characteristics and analyzes trajectories, while the high-energy microwave strike drones employ directional energy technology to deliver precise electromagnetic damage, forming a short-range active interception defense chain. The system can be deployed as a single unit, creating a defensive perimeter with a diameter of 400 meters; alternatively, multiple units can be flexibly deployed to form a broader coverage defense network.

System Features: Low cost, compact size, lightweight design, portability, frontal strike capability, instant destruction effect, and intelligent coordination.

2. Function

1) Large Field of View and Long-Distance Environmental Monitoring:

By employing high-resolution image fusion technology and intelligent target recognition algorithms, the system achieves panoramic situational awareness of wide-area scenes and enables effective target feature identification and tracking.

2) Close-Range Microwave Strike Drone:

By emitting high-energy microwave pulses, the system instantly destroys drone systems within short ranges, featuring simultaneous multi-target strike capability. Specifically designed for swarm attack scenarios, it offers rapid response times, extremely low operational costs, flexible distributed deployment, and support for swift, mobile operations.

3. System Composition and Appearance

The system composition includes: high-energy microwave countermeasure equipment, optical tracking and targeting system, and command and control terminal.

Miniature, high-energy microwave anti-countermeasure equipment system



Figure 1 Schematic Diagram of the System Appearance

4. Characteristic

- 1) Adopt a low-cost approach to address "low, slow, and small" drones and swarm systems, featuring reduced expenses, compact size, portable deployment, and high mobility.
- 2) The high-energy microwave system enables surface strikes and instantaneous damage to drones, with no frequency limitations, high efficiency, and robust reliability.
- 3) It can be used independently or integrated as a module into existing equipment systems without conflicting with existing countermeasures. As one of the most robust protective defenses, it exhibits strong compatibility.

5. Key Technical Indicators

Table 1 Technical Specifications of the Miniaturized High-Energy Microwave Anti-Equipment System

Order number	Parameter	Metric
1	Method of injury	Electromagnetic breakdown (independent of communication frequency)
2	Maximum effective strike range	300m (target DJI series)
3	Coverage angle	Horizontal: 0 °-360 ° (omnidirectional) / Vertical: 0 °-90 ° (adjustable elevation angle)
4	Working frequency band	S frequency range
5	Maximum detection and tracking range	1000m
6	Number of targets to attack simultaneously	1-30+
7	Target tracking accuracy	≤0.1 °
8	Response time	≤1s
9	Power Supply Interface	Municipal power supply (220V) or battery pack with a rated power of 1800W
10	System power consumption	Standby power consumption: 100 W; Operating power consumption: 400 W
11	Cost of Enforcement	The cost per single pulse emission is only 0.3 yuan.
12	Continuous working period	500 hours (a 1 kWh battery pack can operate for 1 hour)
13	Equipment Weight	120kg

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14	Equipment Deployment Size	2.0m*1.8m*1.8m
15	Operate mode	Single-machine mode or network mode

16	Working temperature	-40℃~+65℃
17	Levels of protection	IP56

6. Deployment Method

For local defense, the deployment schematic is as follows:



Figure 2 Schematic Diagram of the Deployment of a Local Defense Anti-Missile System

The defense system can be flexibly configured and deployed according to the specific requirements and actual terrain conditions. By deploying multiple high-power microwave anti-drone systems in a distributed manner, the detection and strike range against drones is significantly expanded. Compatible with existing anti-drone systems, it effectively addresses blind spots in drone swarm defense.

The system offers instantaneous effectiveness and low cost for drone strikes. Its attack mode transcends traditional point-to-point approaches, delivering comprehensive defensive strikes across entire areas, thereby significantly countering the saturation attacks posed by swarm-based drones.