

Brief Introduction to Series Low-Altitude Defense Hard-Kill Counter-UAV System

1. Overview

The low-altitude defense system is a series of versatile, low-cost and high-cost-performance hard-kill products developed by our company for **low, slow and small (LSS) unmanned aerial vehicles**. As shown in Figure 1, the system mainly consists of an **integrated storage-transport-launch container**, a **ground test, survey and launch control system**, and electrically propelled drones. Target designation for the system is provided by laser and other UAV detection systems.

The system supports both **vehicle-mounted mobile launch** and **fixed launch**. Target strike modes can be divided into **explosive destruction** and **net capture** according to user requirements. After intercepting the target unmanned aerial vehicle, the electrically propelled drone can be recovered by parachute landing.

The core of the system is the **ducted-fan electrically propelled drone**. The schematic diagram of the ducted-fan electrically propelled drone control system is shown in Figure 2.

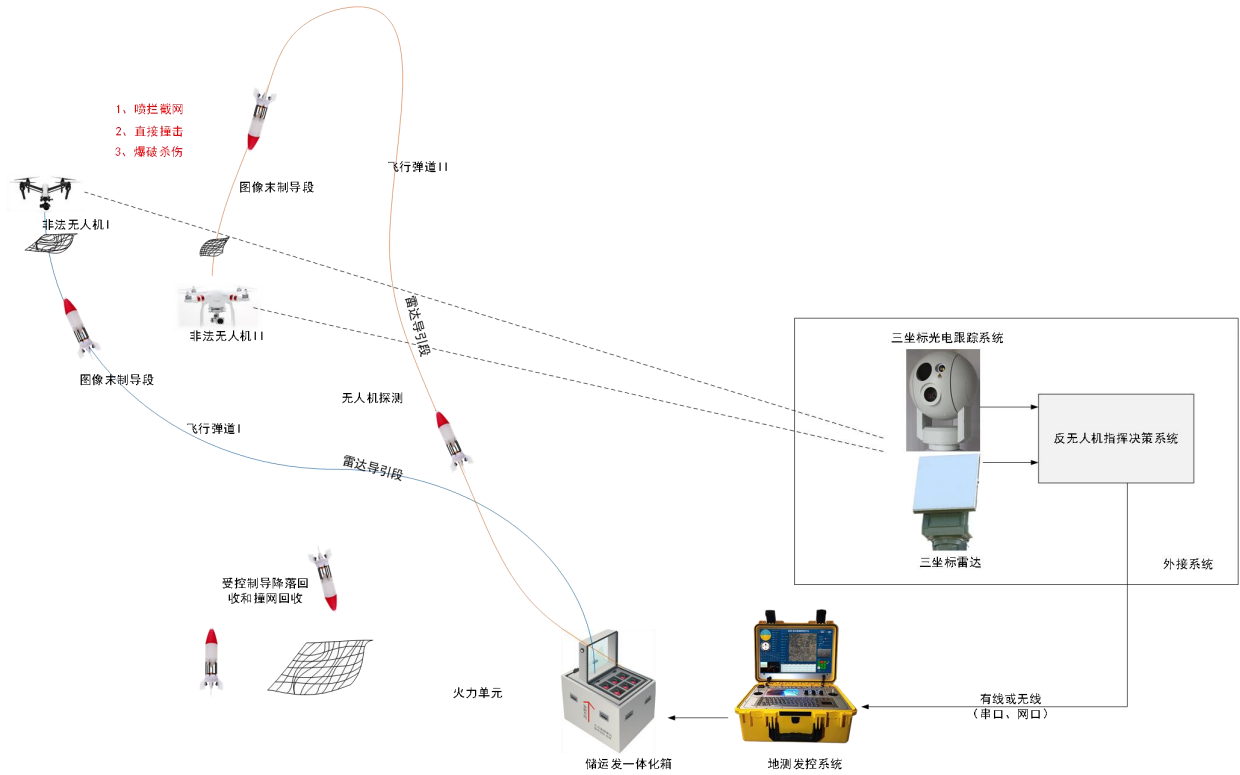


Figure 1 Block Diagram of Low-Altitude Defense System Composition

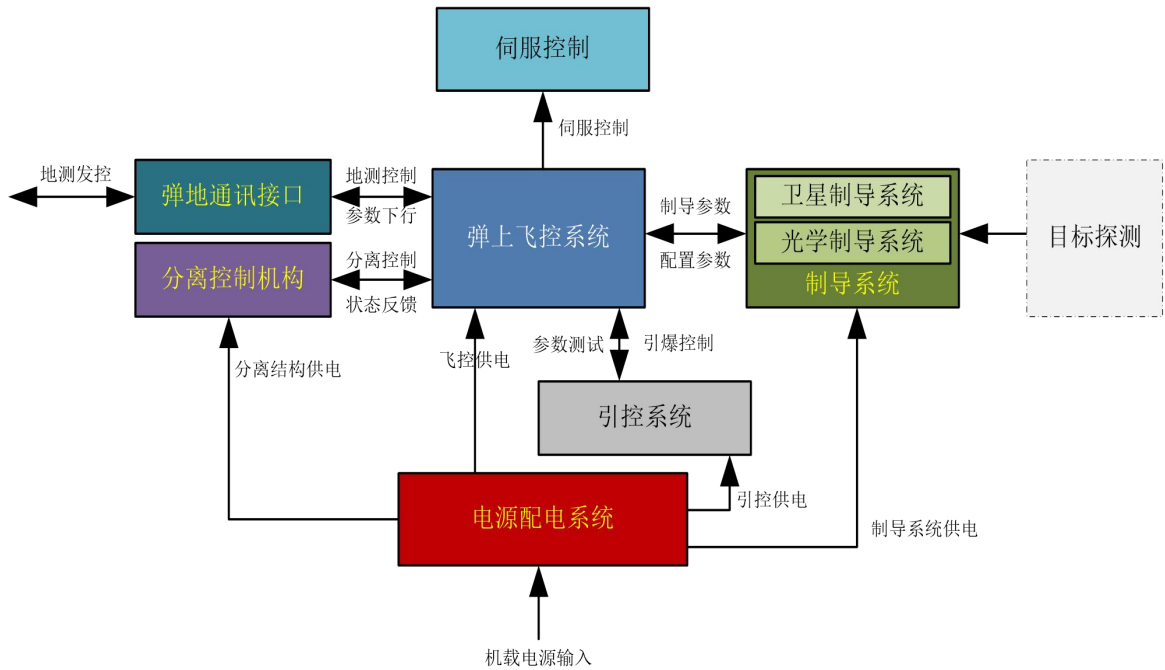


Figure 2 Principle Block Diagram of Electric Propulsion Missile Control System

II. Main Tactical and Technical Specifications

The appearance of the electrically propelled interceptor drone is shown in Figure 3. The main tactical and technical specifications of the low-altitude defense system are listed in Table 1.



Figure 3 External View of Electrically Propelled Drone

Table 1 The main Tactical and Technical Specifications of Anti-UAV System

Category	Indicator name	Indicator data
Performance	size	400×300mm
	Max flight speed	90m/s (350km/h)
	Launch mode	Omnidirectional Vertical Launch
	Flight distance	>6Km
	Launch Azimuth	360°
	Projectile Weight	3000g

	Interception mode	Net Capture & Parachute Recovery
	Lethal Element Payload	300g

The external view of the integrated storage-transport-launch container is shown in Figure 4. Its main technical parameters are listed in Table 2.



Figure 4 Integrated Storage-Transport-Launch Container and Interfaces

Table 2 Main Tactical and Technical Specifications of Integrated Storage-Transport-Launch Container

Category	Indicator name	Indicator data
Integrated Storage-transport-launch container	Overall size	460 X 520 X 452mm
	Number of loaded electric propulsion projectiles	≥ 6
	Number of simultaneous ballistic calculations	≥ 6
	Number of simultaneously controlled electric propulsion projectiles	≥ 6
	Power supply	AC220V $\pm$ 10%/50Hz
	Full load weight	<50kg
	Storage temperature	-40°C—+85°C
	color	Desert yellow

III. Ground Test, Measurement and Launch Control Software

The ground test, measurement and launch control software of the low-altitude defense system is shown in Figure 5. The main functions of the software include target data reception, drone testing, drone launch, data storage, and strike effect evaluation.



Figure 5. Main interface of the ground-based launch and control software for the low-altitude defense system.



Detection Technology	Fiber optic sensing technology (non-electromagnetic technology)
Type of probe vehicle	It covers both manned and unmanned aerial vehicles, with manned aerial vehicles including passenger planes, helicopters, etc., and unmanned aerial vehicles including conventional drones, fiber-optic guided drones, silent flight drones, etc. These aerial vehicles have various flight modes such as conventional flight, autonomous navigation, fiber-optic wire control, and silent flight.
Detection range	The detection range of large aircraft such as passenger planes is >10km; the detection range of drones weighing 6kg is >5km; the detection range of drones weighing 1.2kg is >1km;
Protection level	IP65



Operating Temperat ure	-15°C~+65°C
Probe size	Φ580/H800mm
footprint dimension	2.4m x 2.4m

