Nighthawk IV UAS Aerial Surveillance Simplified

The Nighthawk IV small unmanned aerial vehicle brings military hardened technology to civil agencies and commercial user groups. Supremely easy to operate and recently certified by the FAA, the Nighthawk offers greater range and flight time than comparable systems.

Nighthawk's FAA approved training, maintenance and repair procedures allow qualified agencies to quickly obtain a Certificate of Authorization (COA). A variety of custom payloads allow the customer to outfit the Nighthawk specifically to their needs.



User Friendly Design

- Map based flight planning from variety of map sources
- Point and click navigation via advanced military grade autopilot compensates for windy conditions and terrain elevation changes
- Computer assisted manual flying when desired
- Automated landing
- Returns home and auto lands in event of loss of communication
- Half day training course to become a certified Nighthawk pilot
- All flight data is recorded for after action review and exact recreation of events
- Designed for quick field repairs and minimal down time

Versatility

- Single man portable and capable of being launched in about a minute
- Automated tube launch capable for fixed site security applications
- Integration with ARA E-UGS and RAPID offers complete autonomous security solution

Capability

- Size and sound footprint of the Nighthawk makes it difficult to spot
- Cannot be heard 300'+ above ground level
- Fly multiple airframes on single ground station
- Transfer airframe between distant ground stations during flight
- Return to flight in minutes via swappable battery



Nighthawk IV UAS

Specifications





Nighthawk IV UAV

Flight time	60 minutes
Range	> 10km
Nose to Tail	24"
Wingspan	26"
Weight	1.6 lbs
Power	Rechargeable LiPo
Payload capacity	0.5 lbs

Nighthawk is subject to International Traffic and Arms Regulations (ITAR), requiring a U.S. Department of State license to export.



Ground Control Station		
Hardware	Combox Laptop Antenna Gamepad	
Power	Rechargeable LiPo	
Software	Virtual Cockpit	
Weight	12 lbs	



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Mapper

(stored imagery and live navigational video)

The Mapper payload allows users to capture survey quality imagery for post processing. High quality images (12MP) are provided by a downward facing GoPro still imager. The GoPro imager is customized with lensing which provides a more appropriate field of view for mapping operations. A live view forward facing video camera is installed to assist with navigation and targeting.

Applications of this payload include:

- Accident reconstruction
- Surveying
- Agriculture
- Post processing search and rescue
- 3D terrain mapping
- Critical asset monitoring

Mapper Specs			
Cameras	EO video GoPro still imager		
Resolution	NTSC, 12MP		
Output	Real time video 12MP JPEG		





ISR Gimbal

(live navigational and gimbaled day/night video)

The ISR Gimbal payload is designed to find people and quickly inform response teams. The pod is equipped with three cameras; a gimbaled EO and IR side facing combination, and a forward facing EO camera. Essential for night flying and search scenarios, the IR camera identifies targets of interest in challenging conditions. When targets of interest are spotted they can be further interrogated with EO cameras.

The Nighthawk gimbal stabilizes imagery for unparalleled video quality out of a small UAV. The gimbal stabilizes in the 'roll' direction and is comprised of rubberized actuation in a carbon pod for ruggedness with minimal weight, complexity and cost.

Applications of this payload include:

- Real time search and rescue
- Disaster response
- Fire response
- Border security
- Facility security

ISR Gimbal Specs			
	Low Resolution	High Resolution	
Cameras (Gimbaled)	EO video, IR video	EO video, IR video	
Resolution	NTSC, 320	NTSC, 640	
Output	Real time video	Real time video	









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Target and Track

(stored imagery, stabilized daylight tracking and IR acquisition)

The Target and Track payload dynamically changes the path of the airplane to maintain target acquisition. Onboard image processing maintains a target in the field of view of the camera. The tracking camera is an electronic pan/tilt with 5X digital zoom, which also provides high resolution still images and HD video. This payload is also equipped with an IR camera to assist with initial target acquisition.

Applications of this payload include:

- Tactical operations
- Military operations
- Border security

Target and Track Specs			
	Low Resolution	High Resolution	
Sensors	HD video Still imager IR video	HD video Still imager IR video	
Resolution	720p 10MP 320	720p 10MP 640	
Output	Real time video still images	Real time video still images	

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Chem/Rad

In the event of an airborne chemical or radioactive release the Chem/Rad Payload indicates regions where the system passed through a plume. Onboard sensors screen the air around the Nighthawk to determine the presence of dangerous chemicals or radiation without the need for an analyst.

- Parts per million (PPM) and parts per billion (PPB) sensitivities available
- Indicates contaminated regions on the flight map
- Sensitive gamma detector provides gross counts similar to a Geiger counter

E-UGS and RAPID Integrations

Nighthawk can be stored and launched from a tube allowing for integration with existing security solutions to offer rapid eyes on target. ARA's Expendable Unattended Ground Sensors or RAPID System can be used as a cueing system for the tube or hand launched Nighthawk delivering a permanent or tactical security solution which delivers an aerial response to ground alerts.



