

Unmanned Aerial Vehicle: “ALBATROSS”



Purpose

Albatross is intended for reconnaissance, target detection and tracking, protection and surveillance of state borders and remote areas, search and rescue missions in daylight and in complete darkness.

UAV is equipped with payload such as 2MP IP video camera with gimbaled stabilization.

Additional removable payload can be included in the scope of supply by order and includes thermal-imaging camera together with daylight camera with x10 optical zoom.

UAV is manipulated from a tablet computer.

Scope of supply:

Parameter	Q-ty, pcs	Purpose
Unmanned aerial platform	1	Intended for operation according to the flight plan. Shockproof case is made of high-quality composite materials
IP-video camera with gimbaled stabilization	1	Payload is intended for visual surveillance over secured areas displayed on the control panel. Attached to the UAP.
Pan and tilt unit with broadband access module	1	Wi-Fi transceiver with integrated antenna in a pressurized plastic housing. Is applied to extend UAV effective range and provide wireless link between UAP and UAV communication and control module. Incorporates gyrostabilized magnet compass and battery pack.
Battery pack	2	UAV power supply
Charger	1	Intended to charge UAV accumulating batteries from one-phased 220 V 50Hz power source.
Control panel	1	Is intended to operate UAV and display video in real time
Packing	1	Intended to hold and protect UAV components during transportation. Includes two bags: one for pan-tilt unit and broadband access module and another one for UAV parts.
Expansion set (by special order)		

Thermal imaging module with gimbale stabilization	1	For video surveillance in daylight and nighttime
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Special Features:

“Albatross” has carbon fiber modular structure and is easily dis/assembled. Fast removable payload can be changed within minutes and does not require additional adjustment and setting. Operator manipulates the UAV from a tablet computer by sending the following commands: “takeoff”, “land”, “5 meters up”, “5 meters to the right”, “fly to the waypoint with coordinates...”, etc. It can follow a preset map-oriented or manually-controlled flightplan. Flight mission allows up to 50 waypoints. Operator sets waypoint coordinates, altitude and hovering time. Flight is possible without a map and a flightplan. Easy switch to manual operation and back. Operator can terminate the flight at any time for fully automatically return to the take-off position and landing.

Control and telemetering wireless link meets high requirements on noise immunity and protection of data in transit. Noise immunity is secured by hopped carrier frequency and data encryption.

Preinstalled software provides multi-level protection from wrong operator actions.

Real-time video can be transmitted from the UAV to Command and Control Center and/or mobile control center.

Application:

“Albatross” UAV is intended for research and rescue missions and for border control purposes, is suitable for tasks of the Ministry of Home Affairs, Emergency Ministry for reconnaissance and surveillance application.

Technical Features

Parameter	Value
Cruising altitude, m	20 – 200
Air speed, km/h	from 0 to 50
- speed drop down to, m/sec	1
Max altitude above sea level, km	3000
Travel radius, up to, km	3
Max wind resistance for efficient application, m/s	10
Max wind resistance for efficient en-route flight, m/s	14
Max vertical speed, m/s	
- upwards	5
- downwards	3
Max endurance time in normal weather conditions, one set of batteries, up to, min	30
Set-up time by one person, up to, min	10
Operation via secured communication link (with directed antenna), MHz/coverage area up to, km	868 / 6
Stabilized camera gimbal	Pitch/roll
Position Hold/Preset waypoint flight/Positional data	GLONASS / GPS
Automatic landing into circle, m	3
Automatic return at voltage drop	Yes
Flight termination by operator command	Yes
Video camera resolution	2 MP
Thermal-imaging camera:	
Spectral sensitivity, mkm	8-14
Resolution, px	384x288
Pixel size, mkm	25
Human detection distance, up to, m	150

Operating temperatures, °C	from -25 to +50
Takeoff weight with payload, up to, kg	4,5
Total weight, up to, kg	12
Overall dimensions (without air blades) not more, mm	
- length	620
- width	620
- height in park position	350

* Standard conditions: normal pressure 760 MmHg, wind speed up to 3 m/s, temperature from 0°C and higher.

“Albatross” UAV design

High portability is provided by fast-assembled parts:

