



Aerial Radiological Reconnaissance

compact UAV for search, localization and mapping of radioactive sources

MS-UAV-ARR is a compact quadcopter for aerial and radiological reconnaissance: search, localization and identification of radioactive sources, contaminated-area mapping and monitoring of nuclear power plant territories and emergency situations. Flight in search mode is fully automatic, with an optional thermal imager for night operations.



The control channel uses cryptographic encryption, and the platform carries no software locks and does not depend on GSM networks. Weather monitoring supports contamination-spread prediction based on wind direction and speed.

SOLUTION

- Aerial and radiological reconnaissance
- Fully automatic flight in search mode
- Optional thermal imager for night flights
- Cryptographic encryption of the control channel
- No software locks; independent of GSM networks

ADVANTAGES

- Search, localization and identification of radioactive sources
- Contaminated-area mapping
- Weather monitoring and contamination-spread prediction
- Monitoring of nuclear power plant territories
- Monitoring of emergency situations



Specifications

MS-UAV-ARR

Maximum altitude	3000 m
Tactical range	3 km
Maximum range	5 km
Maximum flight time	55 min
Maximum wind speed near the ground	15 m/s
Maximum payload weight	400 g
Operating temperature	-15 to +60 °C
Props	7 inch
Frame	carbon / plastic

Camera

Operating system	integrated OS Linux
Video	720p (1280×720) 30 fps
Maximum resolution	3 Mpix
Stabilization	gyro-stabilized, single axis
Matrix	1/2.9" Progressive CMOS F23



Ground control station

Display	5 inch
Protection	IP64
Military standard	MIL-STD-810G
Working time	12 h
Operating temperature	-35 to +60 °C

Radiological detectors

Detector 1	CsI(Tl)
Sensitivity (^{137}Cs , ^{241}Am)	100 s ⁻¹ /(μSv/h)
Energy range	0.06 – 3.0 MeV
DER measurement range	0.1 – 100 μSv/h
Response time	0.25 s
Detector 2	Geiger-Müller
DER measurement range (G-M)	0.1 μSv/h – 10 Sv/h
DER measurement accuracy	±(20+0.002/H)%, H = DER in μSv/h
Operating temperature	-30 to +60 °C



Ground control station

MS-UAV-ARR dimensions and ground control station

Specifications are subject to change without notice.
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