

DRONES-G MINI

Lightweight drone module with integrated radiation detector



The DRONES-G MINI module with integrated radiation detector is a compact and lightweight system to be used with small commercially available drones, while maintaining sufficient detection sensitivity for measurements in the event of a radiation accident or for routine monitoring by security forces. The system was developed in cooperation with the State Institute of Radiation Protection in Czech Republic as part of their Security Research Program.

Benefits

- Gamma radiation monitoring in difficult or potentially hazardous areas
- System can be used with commercially available drones
- Autonomous and independent operation
- Long distance data transmission
- Monitoring and spectrometric analysis in real time

Key Figures

1.125 Kg

➔ *Weight*

2 detectors

➔ *GM tube and NaI(Tl)*

1.5 hours

➔ *Battery life*

Product Description

A compact and lightweight drone module with integrated control electronics processing the measured data from the GM tube and NaI(Tl) scintillation detector. The data is geolocalized using an integrated GPS module. At the same time, the real altitude above the terrain is measured using an optical altimeter. The system also monitors physical quantities – temperature, humidity and pressure. Barometric pressure information can also be used to calculate relative altitude. Measured data are sent in real time via radio communication to a supervision system (typically a portable computer with MS Windows operation system). Measured data are also stored on the SD card allowing to perform spectrometric analysis either in real time during the survey, or at the reprocessing stage.



Technical Specifications

Dimensions	250 x 110 x 110 mm
Weight	1.125 kg (with holder for DJI 300 RTK)
Battery	Li-Pol, 11.1 VDC/500 mAh, duration max. 1.5 hour
Detector 1	NaI(Tl) Ø 1" x 2", 1" photomultiplier · FWHM < 7.5% @ 661 keV · 50 nGy/h to 80 µGy/h
Detector 2	GM tube LND 71210 · 50 nGy/h to 20 mGy/h · 1.4 cps @ 1 µGy/h, 137Cs
Altimeter	Optical rangefinder, max. 50 m
Operating temperature	-30 to +55 °C
Communication	Radio, 433 MHz, range max. 3 km
Software	Dronic Lite

Recommended drone DJI M 300 or any UAV with sufficient payload.

Software

The proprietary DRONIC LITE Software is optimized for tablets with Windows operating system. It enables the user to map the radiation, the dose rate and monitor the spectrum and its evolution using the waterfall display.

Applications

Compact systems compatible with small, commercially available drones for emergency measurements in the event of a radiation accident or for routine monitoring by security forces or radiation protection staff.