# RADRANGER

Robotic Ionizing Radiation Measurement and Analysis System
Unmanned Ground Vehicle (UGV)

## Overview

**RADRANGER** is a high-tech radiation security system that detects, analyzes, and securely transmits data on radiological and nuclear (gamma and neutron) threats in real time, without the need for human intervention, using advanced measurement and analysis systems integrated into a remotely controlled unmanned ground vehicle (UGV) platform.

The system's **1024–4096-channel MCA** structure enables the discrimination of various radioisotopes with high energy resolution, allowing not only dose rate measurement but also the classification of potential radiation sources. In this way, potential threats can be identified quickly and accurately in the field.

**RADROVER** provides a safe and effective means of performing radiological and nuclear measurement processes in challenging and hazardous areas, minimizing personnel risk. Thanks to its tracked system, it can operate optimally even under difficult field conditions. With a minimum of 90 minutes of continuous operation, it ensures sustainable use during missions.

The precise GNSS positioning system on the platform records detected radiation hazards along with their geographic coordinates, creating detailed map-based reports. Visual records obtained through integrated cameras support the measurement data and provide comprehensive analysis of the field conditions.


The radiation performance tests of the **RADRANGER** system are conducted in ISO/IEC 17025 accredited laboratories in compliance with the IEC 60846-1, IEC 60532, and IEC 62327 standards.

**Fields of Application**

- CBRN (Chemical, Biological, Radiological, Nuclear) threat analysis and risk mapping
- Detection and analysis of radioactive contamination caused by war or terrorism
- Radiological reconnaissance and measurement in military operation zones
- Radiological safety of industrial facilities
- Environmental radiation monitoring activities at nuclear power plants
- Identification and monitoring of environmental radiation hazards
- Emergency response and radioactive fallout measurements

**Advantages**

- Real-time radiation measurement and analysis
- Gamma and neutron dose rate measurement capability
- Radioisotope identification feature
- Wide coverage area and high field performance
- Map-supported reporting and visual recording
- Safe operational capability under challenging conditions

# Technical Specifications

## Radiation Measurement System :

| Feature | Value | Description |
|---|---|---|
| Detector | $LaBr_3$, CsI(Tl), solid-state neutron detector (optional) | |
| Radiation Type | X-ray, gamma, neutron | |
| Measured Parameters | H*(10) | |
| Energy Range | 30 keV- 3.0 MeV | For gamma radiation type |
| Energy Range | 0.025 eV - 14.0 MeV | For neutron radiation type |
| Dose Rate Range | 10 nSv/h- 100 µSv/h | Spectroscopic radioisotope analysis |
| Dose Rate Range | 100 µSv/h -10 Sv/h | With different types of detectors |
| Communication Protocol | 3G,4G,Satellite | Satellite is optional |

## Unmanned Ground Vehicle (UGV) :

| Feature | Value | Description |
|---|---|---|
| Dimension | 70x31x40cm | |
| Weight | 15kg | |
| Material | Alüminyum alaşım + Yüksek mukavemetli plastik | |
| Voltage | 28V-33.6V | |
| Speed | 0 ~ 2.5m/s | |
| Maximum Climbing Angle | 30° | |
| Maximum Torque | Yaklaşık 45N.m | |
| Battery Capacity | 8000mAh | Upgradable to 15000 mAh capacity |
| Battery Life | 1-2 saat | |
| Charger | Standard (33.6V 3.5A) | |

# Contact


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