



AT6103 Mobile Radiation Scanning System

AT6103 Mobile Radiation Scanning system is designed for gamma and neutron radiation sources search and detection and for identification of radionuclide composition. This system is a high-performance tool to prevent radiological terrorist threats and such other activities as illegal radioactive substances and materials storage, use, transfer and trafficking. It can also be used to monitor radiation on territories, routes, isolated grounds, industrial sites, etc. featuring data GPS geo-referencing functionality.

Operating principle

Mobile Radiation Scanning System comprises AT6103/1 and AT6103/2 Mobile Radiation Scanners, which are capable of combined or independent operation. Each system is placed into individual rugged case facilitating operation in vehicles, helicopters, etc.



AT6103/1 Mobile Radiation Scanner in transport case



AT6103/2 Mobile Radiation Scanner in transport case

The systems operates in continuous radiation environment scan mode. When radioactive source is detected it identifies radionuclide composition automatically. Types of identified radionuclides are displayed on PDA screen and operator hears a corresponding voice message in a wireless headset. Measurement results are continuously transmitted to PDA for subsequent PC processing and can be plotted onto a map using Application Software tools.

Specification

	AT6103/1	AT6103/2
Radionuclides identification	<ul style="list-style-type: none"> - Medical radionuclides - Industrial radionuclides - Natural radionuclides 	
GPS	Individual order: Library of identified radionuclides can be corrected GPS-receiver, integrated into HPC. Positioning accuracy ≥ 3 m	
Protection class	IP65 (closed transport packaging) IP54 (open transport packaging)	
Continuous run time	~ 12 h	
Working temperature range	-20°C...+50°C	
Relative humidity with air temperature $\leq 35^\circ\text{C}$ without condensation	≤ 95 %	
Overall dimensions, weight	625x243x297 mm, 17 kg	925x243x270 mm, 26 kg





AT6103/1 Specification

AT6103/1 smart probes	BDKG-11M (Spectrometry, dosimetry)	BDKG-04 (Dosimetry)	BDKN-05 (Dosimetry)
Registered radiation type	Gamma radiation	Gamma radiation	Neutron radiation
Detector	Scintillator, NaI(Tl) Ø63x63 mm	Scintillation plastic, Ø30x15 mm	Two ³ He proportional counters Ø32x360 mm in polyethylene moderator
Gamma radiation dose rate measurement range	0.01...150 µSv/h	0.05 µSv/h...10 Sv/h	-
Intrinsic relative error of dose rate measurement	±20%	±20%	-
Energy range In Spectrometric mode In Dosimetry mode	20 keV...3 MeV 50 keV...3 MeV	- 15 keV...3 MeV	- 0.025 eV...14 MeV
Energy dependence of sensibility for gamma radiation dose rate measurement	±10%	±35% (in the range 15 ... 60 keV) ±25% (in the range 60 keV ... 3 MeV)	-
Neutron radiation dose rate measurement range	-	-	0.1 µSv/h...1 mSv/h
Gamma radiation sensitivity for ¹³⁷ Cs	1960 cps/µSv·h ⁻¹	70 cps/µSv·h ⁻¹	-
Integral nonlinearity	±1%	-	-
Relative energy resolution for ¹³⁷ Cs	≤7.5 %	-	-
Sensitivity to neutron radiation of plutonium-beryllium source	-	-	14 cps/neutron·s ⁻¹ ·cm ⁻²
Sensitivity to neutron radiation of ²⁵² Cf source	-	-	21 cps/neutron·s ⁻¹ ·cm ⁻²
Number of ADC channels	1024	-	-
Protection class	IP54	IP54	IP54
Overall dimensions, weight	Ø78x350 mm, 1.7 kg	Ø61x205 mm, 0.5 kg	105x115x380 mm, 3.5 kg

AT6103/2 Specification

AT6103/2 smart probes	BDKG-28 (Spectrometry, dosimetry)
Registered radiation type	Gamma radiation
Detector	Scintillator, NaI(Tl) 400x100x100 mm
Gamma radiation dose rate measurement range	0.01...10 µSv/h
Intrinsic relative error of dose rate measurement	±20%
Energy range In Spectrometric mode In Dosimetry mode	50 keV ... 3 MeV 20 keV ... 3 MeV
Energy dependence of sensibility for gamma radiation dose rate measurement	±20%
Gamma radiation sensitivity for ¹³⁷ Cs	34000 cps/µSv·h ⁻¹
Integral nonlinearity	±1%
Relative energy resolution for ¹³⁷ Cs	≤8 %
Number of ADC channels	1024
Protection class	IP54
Overall dimensions, weight	728x159x159 mm, 20 kg

