Hardware and Software System GeoRad

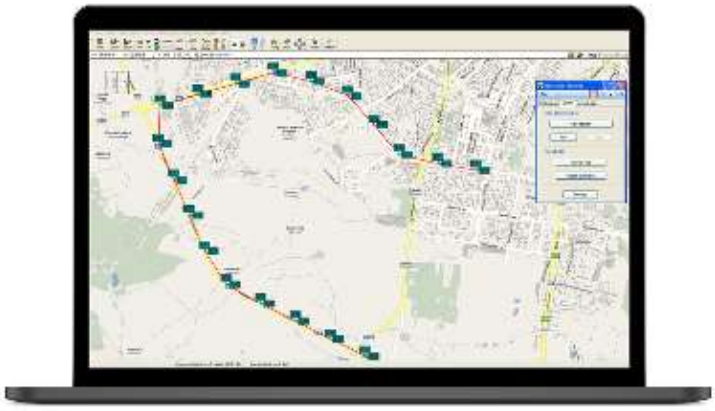
- Designed for construction of portable radiological and radiochemical laboratories
- Works with GoogleMaps and GoogleEarth
- Geo-referenced measurement results
- Data can be transmitted through radio channel

Description

The hardware and software system can be fixed on the vehicle and is used for construction of portable radiological and radiochemical laboratories.

It consists of two BDBG-09 detecting units of gamma radiation, BI-09 interface unit, GPS-antenna BULLET III TRIMBLE and specialized software. Personal computer can be included in delivery kit a at the customer’s request.

GeoRad is intended to measure ambient dose equivalent rate of gamma radiation and to pick up geographical coordinates and current time (from navigation satellites). Measurement results are displayed on a geographical map on the monitor of personal computer, and can be transmitted through radio channel.



Purpose of Use

Measurement of ambient dose equivalent rate (DER) of gamma radiation and acceptance of geographical coordinates and current time from navigation satellites.

Display of geo-referenced measurement results on the PC and archiving of these data.

Transfer of measured data through a radio channel.

Features

- Records measurement results of gamma radiation DER from each channel, as well as geographical coordinates and measurement time within a 500 ms interval.
- Displays and saves measurement results on the PC as a text and as route points with reference to geographical map. There are two modes of information display: in set time intervals or when shifted for a specified distance.
- Supports two threshold levels setting: warning threshold level and danger threshold level relative to each measurement channel of gamma radiation DER.
- Sends sound signals and changes the information display color on the PC monitor when the measured DER exceeds the set threshold levels.
- Warns about failures of the detecting units and the interface unit with sound signals, messages on the PC monitor and LEDs that become highlighted on the interface unit.
- Works either with scanned geographical maps of the Client, or electronic maps GoogleMaps, GoogleEarth, etc.

Specifications

Name	**Unit of measurement**	**Standardized values according to the technical specifications**
Number of gamma radiation DER measurement channels		2
Instrument for gamma radiation DER measurement		BDBG-09 detecting unitof gamma radiation
Measurement range of gamma radiation DER	µSv/h	0.1 … 10^7

Main relative permissible error limit of gamma radiation DER measurement when calibrated to ^{137}Cs with confidence probability of 0.95	%	±(15+2/H*(10)), where H*(10) is a numeric value of measured DER equivalent to µSv/h
Energy range of registered gamma radiation	MeV	0.05 … 3.00
Energy dependence of measurement results during gamma radiation DER measurement in the energy range from 0.05 MeV to 1.25 MeV	%	±25
Navigation system		GPS
Navigation receiver		EB-500 TRANSYSTEM INC
Maximum root-mean-square error in location determination	m	< 50
“Cold” start time	s	35
“Hot” start time	s	1.5
Operating supply voltage range *	V	9 … 36
Supply current *, not more than	mA	100

*For all component parts of HSS apart from PC and PC power adapter.

Delivery Kit

two BDBG-09 detecting units of gamma radiation;
BI-09 interface unit;
GPS-antenna BULLET III TRIMBLE;;
Personal computer can be included
in delivery kit a at the customer’s request.