An Advanced Multipurpose Gamma-Ray Analyzer

Introducing two new models:

GT-40 with a 3” x 3” NaI detector

GT-40 S with built-in lead shielding for focused measurements with

2” x 2” BGO detector or 2” x 2” NaI detector

The new GT-40 series from Georadis represents a major step forward in portable gamma-ray spectrometry for geological, geophysical and environmental surveying, prospecting and investigations. The compact unit with integrated GPS provides the user accurate and reliable results in real time.

The GT-40 and GT-40 S are identical except for the type of detector, see above.

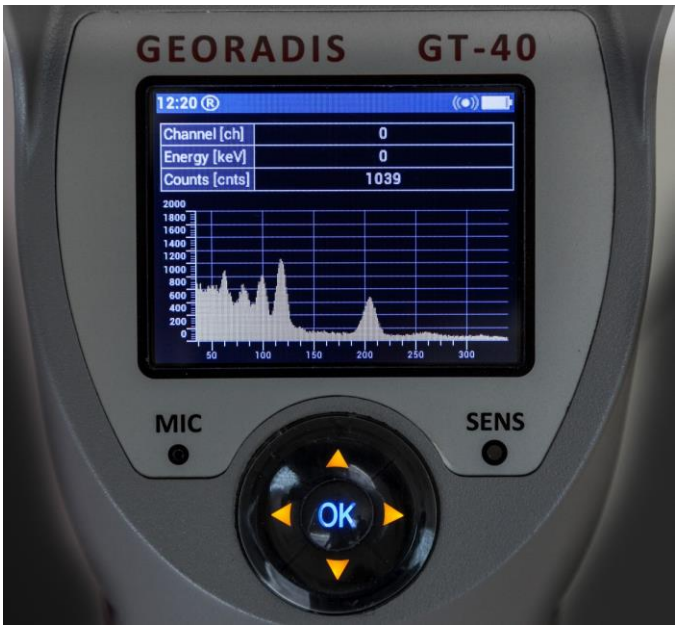
The 3” x 3” NaI(Tl) detector has high sensitivity and good resolution; it can be used for a variety of field applications.

The GT-40 S model with a 2” x 2” BGO detector and lead shielding should be used for focused measurement of cores or for stratigraphic measurements.

Examples of GT-40 applications

- **Exploration for Uranium, Thorium and other associated metals such as REEs**
- **Geophysical research**
- **Geological mapping**
- **Baseline surveying**
- **Core logging**
- **High sensitivity lab measurements**
- **Base station monitoring**
- **Classification of building materials**
- **Land use radon risk assessment**
- **Environmental monitoring**
- **Surface contamination surveys**
- **Monitoring waste disposal sites**

GT-40 and GT-40 S – versatile spectrometers for geophysical and environmental investigations



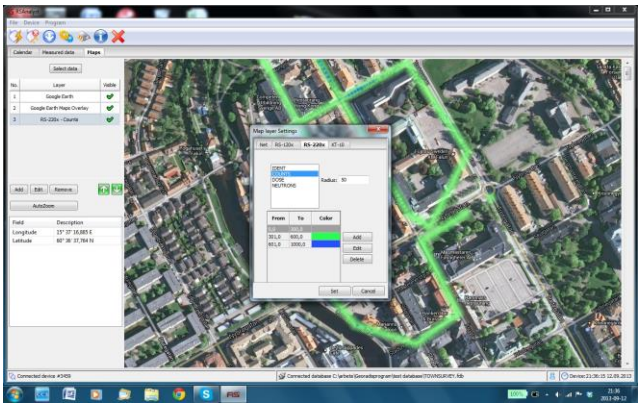
The GT-40 spectrometer has a bright in-the-sun readable color display

Radiation Detection Systems AB

GT-40

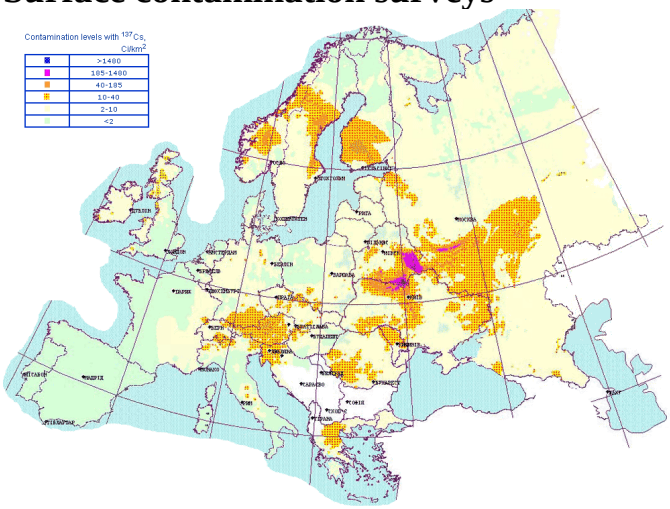
Field Surveys

Using internal constants based on IAEA traceable calibration pads, the GT-40 can compute precise rock concentration of K (%), U and Th (ppm). Results are displayed immediately after end of measurements. They will be stored in the instrument and/or sent to appropriate external devices via Bluetooth or Wi-Fi.
A high sensitivity built-in GPS receiver can automatically record the geographical position and store it with each measurement. Measurements can be stamped with voice notes. Stored voice messages can be played back through the built in speaker. Survey data, including position, dose rate, total gamma and assay data can be collected point-by-point or automatically while walking or driving.



A carborne survey in search of radioactive buildings

Surface contamination surveys



This map, from the Chernobyl Center for Nuclear Safety, Ukraine, shows areas in Europe which were contaminated with Cs-137 from the Chernobyl nuclear accident. The GT-40 spectrometer is factory calibrated for precise measurements of Cs-137 and Cs-134 surface contamination.

As a laboratory unit

Equipped with an optional lead shielding, the GT-40 can also be used as a laboratory instrument.

The built-in software makes it possible to measure and quantify the presence and concentrations of nuclides (Such as Am-241, Co-60, Cs-137, K-40, Ra-226, Th-232 etc) in many different materials. Some examples are food, sand and gravel, steel samples, steel by-products (slag and dust) etc.

In this mode, the GT-40 gives accurate sample analysis with detection limit 10 Bq/kg (Cs-134, Cs-137) in 300 seconds.
For laboratory use, an optional set of pre-contaminated calibration standards is available.

Optional 300 ml sample holder

Nuclide Identification

During analysis, there could be a presence of other nuclides which are not among those included in the calibration standards kit. In such a case, GT-40 will identify the unknowns from a library of some 50 nuclides and estimate their concentration.

Material classification in the field

EU (Directive 305/2011) and other international organizations specify how to evaluate building materials and get approval for use in dwellings (Via CE marking or similar).

Such control includes measurement of the natural radioactivity. GT-40 has a number of survey modes, suitable for most situations. Examples are measurements

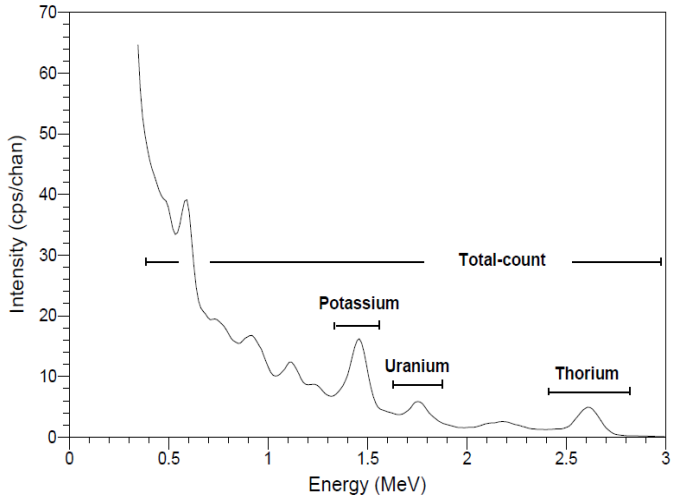
- On the rock surface in the quarry (2π geometry)
- In blast holes
- With the unit buried in the material
- In tunnels (4π)

Principles of operation

The GT-40 utilizes advanced DSP, 1024 channel linear energy spectrometer and pile-up rejection with built in continuous analysis. It also uses an advanced method of automatic stabilization on natural background radiation throughout its operation. This unique stabilization method eliminates the need for an additional radioactive check source.

In addition it has a built-in GPS receiver and an onboard powerful processor. The flexibility of this unit allows for many other customer-specified solutions in surveying and/or monitoring of radiation.

Auto stabilizing without any test sources

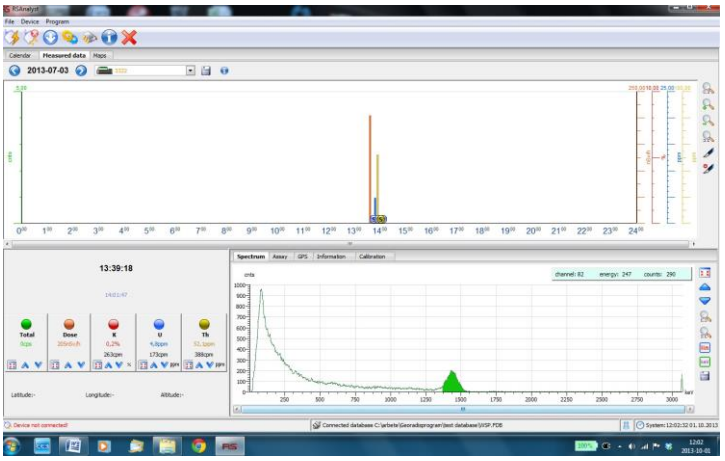


GT-40 is auto-stabilizing on the naturally occurring radioactivity. It does not require any test source

Geoview Software

The GT-40 is provided with utility software to download the data stored in the spectrometer´s memory. All data in memory is output via Bluetooth or USB to the Geoview program on a PC. This may take the form of an Assay result, a full 1024 channel spectra, survey data or scan data with GPS. The program gives graphical and numeric views of the data and allows for data export as a text file for further processing.

The user may download the latest upgrades of the Geoview software via the internet, when available. This service is free of charge for the life of the product.



Presentation of a full 1024 ch spectrum using Geoview software

Radiation Detection Systems AB

GT-40

Technical Specifications

Detectors	
GT-40	NaI(Tl) 76 x 76 mm, 345 cm^3, with bi-alkali PMT
GT-40 S	BGO or NaI, 51 x 51 mm, 104 cm^3, with bi-alkali PMT, shielded with 25 mm lead
Spectrometer	1024 channels, 40 MHz DSP, linear energy corrected, pile-up rejector. 200 ns resolution
Display	Colour, trans-reflective, 360 x 240 pixels, 72 x 54 mm, sun readable
Controls	Illuminated navigation joystick with 5 positions
Acoustics	Loudspeaker, 28 mm diameter and built-in microphone
Data storage	Minimum 2000 survey stations with full 1024 channels spectra, position data and voice recording
Communication	Data transfer, remote control and diagnostics by: USB 2.0 Bluetooth 1.2 class 2 Wi-Fi 802.1 1n
Power	Rechargeable Li-ion battery, 7.2 V, 6600 mAh, min. 10 hours of operation External AC adaptor 110-230 V AC/50 – 60Hz for battery charging or on-line mains operation
Size GT-40	415 mm x 120 mm (diameter)
GT-40 S	335 mm x 120 mm
Unit weights	GT-40 4 kg
	GT-40 S 9 kg
Temperature range	-10 ºC - + 50 ºC
Protection	IP-65, dust and water resistant
CE certification	RFI/EMF shielding complies with FCC (47 CFR part 15) for Class E certification

Sensitivities (For surface measurements i.e. 2π geometry)

Potassium:	200 cpm/% K
Uranium:	18 cpm/ppm U
Thorium	8 cpm/ppm Th

Complete delivery

Spectrometer GT-40 or GT-40 S
AC power adaptor
Instruction manual (English)
USB communication cable
Support CD with Geoview Software (Windows and MAC compatible)
Shipped in a rugged transport and storage case with moulded insert

Shipping weight	GT-40	12 kg
	GT-40 S	17 kg
Dimensions:	One carton,	67 x 51 x 22 cm

Optional accessories:

Lead shield for laboratory use
Set of 18 x 300 mm sample holders
Geological calibration kit (Traceable to IAEA standards)
Carrying harness

Customs code for international shipments:9030 1000 99

The GT-40 is made in the European Union

Specifications are subject to change *02-14*

Manufacturer
GEORADIS s.r.o.

Address	Tel	E-mail
Novomoravanská 321/41	+420 5 4142 2231	info@georadis.com
CZ- 619 00 BRNO		**WEB**
CZECH REPUBLIC		www.georadis.com

Distributor
Radiation Detection Systems AB

Address	Tel	E-mail
Ängsullsvägen 4	+46 (0)72 532 2099	info@peko-geofysik.se
SE-178 52 Ekerö	**WEB**	**WEB**
SWEDEN	www.radiationdetection.se	www.peko-geofysik.se