

Landviser (USA-EU-Russia) partners with SiberGeo, KB Electrometry, and TerraZond on R&D, marketing, and sales of geophysical technologies in North America and worldwide.



SiberGeo

geophysical equipment



«KB Electrometry»



TerraZond



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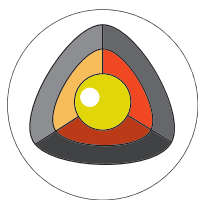


конструкторское бюро
ЭЛЕКТРОМЕТРИИ

«KB Electrometry» LLC was established by the employees of the Russian Academy of Sciences; acting both independently and as part of an agreement for scientific and technical cooperation with the Institute of Petroleum Geology and Geophysics of the Russian Academy of Sciences.

The company has production facilities to develop and manufacture geophysical instruments for electrical exploration and induction profiling; introduces manufactured equipment to various spheres of the national economy; provides training and technical support for the instruments; participates in research activities in the field of geophysics perfecting various geophysical methods, as well as develops and implements methods for integrating geophysical data from multiple sensing platforms.

With the use of “KB Electrometry” electrical exploration equipment, more than 1000 surveying and prospecting jobs have been completed around the world.



TerraZond
GEORADIO TOMOGRAPH

Research and Production Association «TerraZond» was created with the participation of specialists in the field of radiophysics, geophysics and instrumentation.

The company organizes the production of multi-angle GPR sounding under the production framework of a decentralized model, actively uses outsourcing opportunities, including contract manufacturing, which eliminates costs of creating and maintaining excess inventory and focuses on own key competencies: research and development, production of the individual components and units of the instruments, assembly of the final products, information and technical support, as well as customer service.



SiberGeo OÜ

The SiberGeo consortium was created in 2019; it unites Russian manufacturers of equipment for electrical exploration and induction profiling, as well as a hardware and software for multi-angle ground penetrating radar sounding.

SiberGeo OÜ is registered in the European Union and is primarily intended to represent the interests of Russian manufacturers abroad, including participation in various European scientific competitions.

MULTI-ELECTRODE ELECTRICAL RESISTIVITY & INDUCED POLARIZATION IMAGING INSTRUMENTS

The instruments allow for a detailed study of the soil structure to the depth of 300+ meters: exploration of ore minerals; search for landslide zones; determination of bedrock relief before construction of building foundations; localization of underground voids, tunnels, reservoirs; mapping of chemical pollution plumes; mapping of alluvial deposits; diagnostics and monitoring of industrial facilities, such as foundations of buildings and structures, dams, reservoirs and other

KB Electrometry Ltd develops, manufactures and uses in surveys one of the world's fastest electrical resistivity tomography instruments - SibER. Automatic equipment switches current and measuring electrodes over a pre-grounded multi-electrode survey system, making hundreds of measurements per minute. Because of several measuring channels, the field operations are fastest in class, and the measurement arrays could be non-linear. Thus, the true three-dimensional measurements can be made efficiently.

SibER 32K4

Electrical exploration instrument with 4-x measure channels, 32-x electrodes switch and 120W inner Tx source

GENERAL

Electrodes:	1 x 32 + 2 remote
External power:	12 V
Interface:	Wi-Fi, Ethernet
Protection type:	IP67 (transportation), IP54 (operation)
Operating temperature:	-20 ... +50 ° C
Dimensions:	336 x 300 x 148 mm
Weight:	7 kg

SOURCE

Type:	voltage source
Output voltage:	1 ... 250 V
Output current:	up to 1.2 A
Output power:	up to 120 W
Output pulse shape:	rectangular variable polarity
Duration of output pulses:	up to 10 s
Duration of pauses between output pulses:	from 20 ms
Output short circuit protection:	Yes

MULTI-CHANNEL MEASUREMENT MODULE

Number of channels:	4
Input resistance:	10 MΩ (full range)
Number of readings:	1 ... 500
Sampling frequency:	50, 60 Hz
ADC resolution:	24 bits
Input voltage:	±20 V
Resolution:	1 μV
Interference suppression of industrial frequencies:	not less than 90 dB
Overvoltage protection:	up to 1 kV



Compact instrument for Electrical Resistivity Tomography (ERT) and Induced Polarization (IP) surveys. Small yet fully functional ERT instrument with 120W inner transmitter. Ideal instrument for well-logging of resistivity.

Real-time control via any device (laptop, smartphone, tablet) with Android, Windows or Linux OS



SibER 48K12

Electrical exploration instrument with 12-x measure channels, 48-x electrodes switch and 220W inner Tx source

GENERAL

Electrodes:	2 x 24 + 2 remote
External power:	12 V
Interface:	Wi-Fi, Ethernet
Protection type:	IP67 (transportation), IP54 (operation)
Operating temperature:	-20 ... +50 °C
Dimensions:	464 x 366 x 176 mm
Weight:	12 kg

INTERNAL SOURCE

Output voltage:	up to 500 V
Output current:	up to 2 A
Output power:	220 W
Pulses duration:	> 10 s
Pauses duration:	< 20 ms
Short circuit protection:	Yes

MEASUREMENT MODULE

Number of channels:	12
Input resistance:	10 MΩ
ADC resolution:	24 bits
Input voltage:	±20 V
Interference suppression of industrial frequencies:	>90 dB
Overvoltage protection:	up to 1 kV

Control by any devices: PCs, tablets, smartphones with Microsoft Windows, Android, Linux OS.

Full-effective solution in a single monoblock for surveys by methods electrical resistivity tomography and induced polarization with a built-in 220 W source.



SibER 64K15E

15-channel electrical resistivity tomography equipment with the ability to extend survey line via external switches and power Tx source

GENERAL

Electrodes:	2 x 32 + 2 remote
External power:	12 V
Interface:	Wi-Fi, Ethernet
Protection type:	IP67 (transportation), IP54 (operation)
Operating temperature:	-20 ... +50 °C
Dimensions:	502 x 415 x 246 mm
Weight:	17 kg

INTERNAL SOURCE

Output power:	220 W
Output current:	up to 2 A
Output voltage:	up to 500 V
Short circuit protection:	Yes
Duration of output pulses:	up to 10 s
Duration of pauses between output pulses:	from 20 ms.

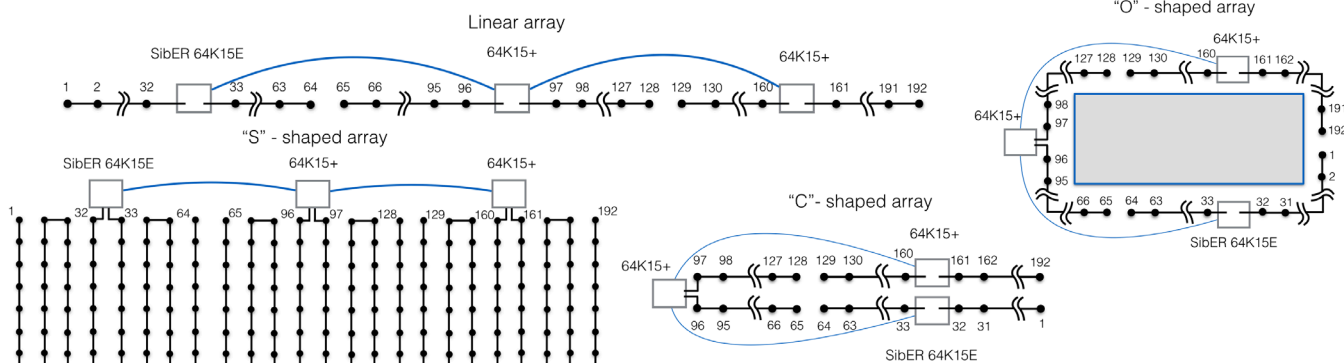
EXTERNAL SOURCE

VP-1000M and etc.

MEASURING ARRAYS

Schlumberger, dipole-dipole, forward and reverse pole-dipole, pole-pole, Wenner Alpha/Beta/Gamma and custom arrays.

VARIANTS OF TEMPLATES USING EXTERNAL SWITCHES SIBER 64K15 +

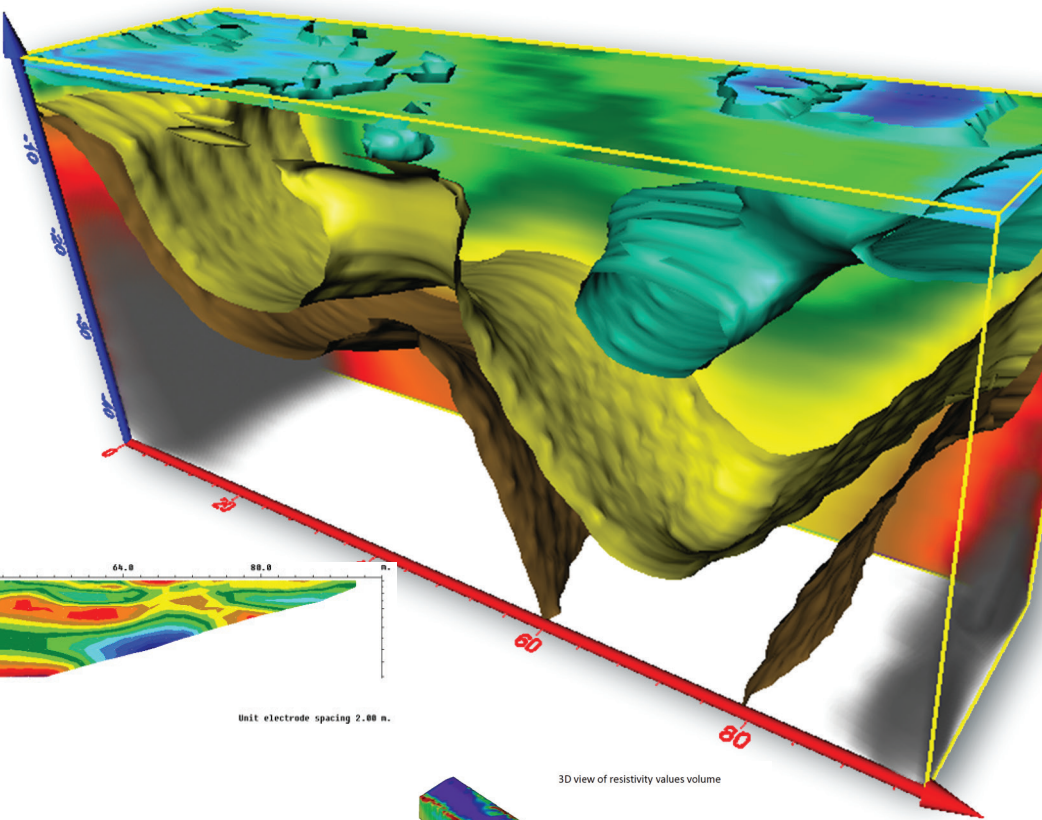


Control by any devices: PCs, tablets, smartphones with Microsoft Windows, Android, Linux OS.
Possibility of cascade expansion using switch SibER 64K15 + modules

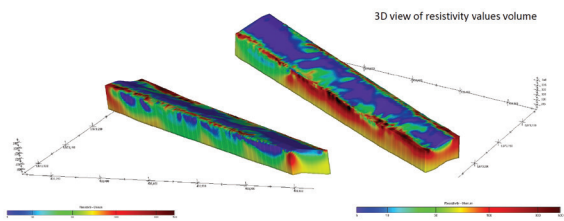
A comprehensive solution in a single monoblock surveys by methods of electrical resistivity tomography and induced polarization with built-in 220 W source, measurement module for 15 channels, switch for 64 electrodes, as well as the ability to add an external generator and switches for connecting more than 1000+ electrodes.



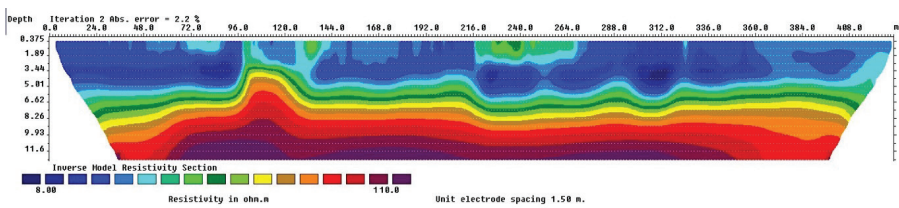
Pre-project
geophysical
surveys



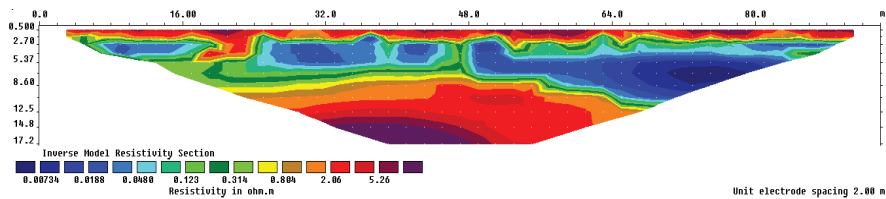
Three-dimensional
presentation of monitoring
result data



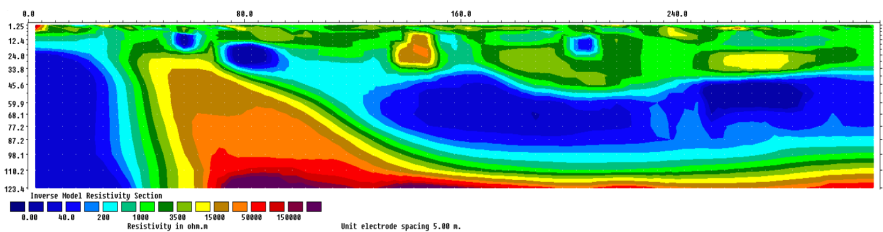
Diagnostics of
soil dams



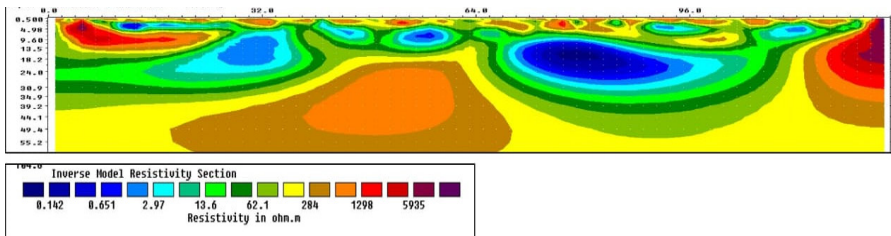
Reservoir waterproofing
assessment



Archaeological
research

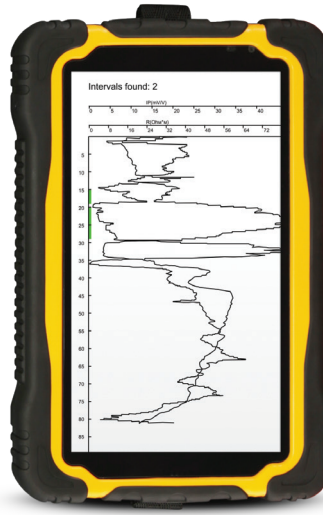
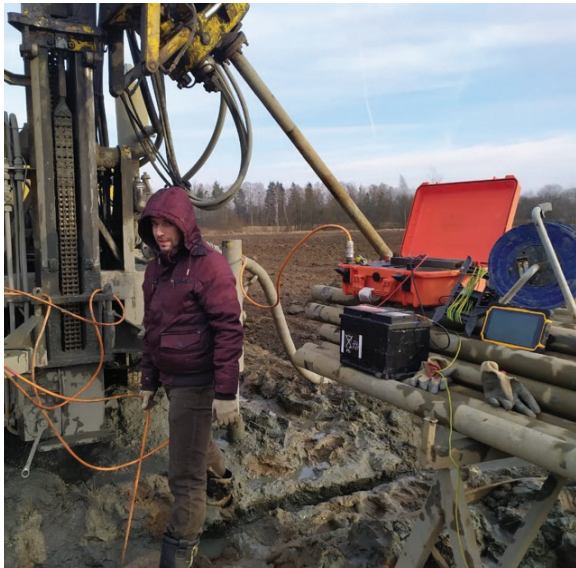


Localization of watery
zones in difficult
conditions

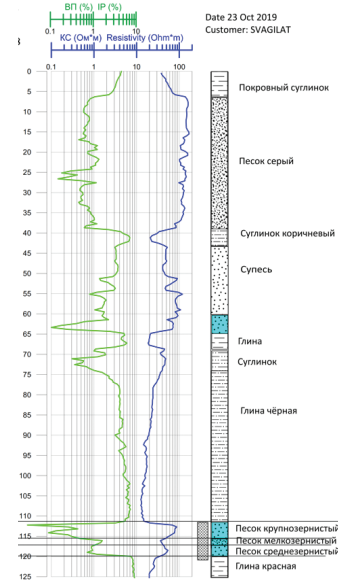


GEOPHYSICAL SURVEY OF WELLS

When drilling water wells, the most accurate method for determining the position of the aquifer is the method of well logging. As an alternative to the expensive well logging systems and hiring a qualified specialist to interpret the results, we offer the Xeris well logging module using the «SibER» series electrical resistivity tomography and induced polarization instrument and a special logging cable. As the result of «SibER» logging, we get IP and resistivity data in the well. The interactive interface of the program guides you during measurements, then the automated interpretation algorithm helps you to choose the optimal level for the filter column.



IntellyLog interpretation



XERIS 5.X

Control program for SibER instruments

The equipment is controlled via Wi-Fi or Ethernet using the Xeris software, which provides tools for collecting and processing electrical resistivity and induced polarization tomography data and can be installed on any device with the Android, Windows or Linux operating system. A simple, intuitive interface of the program allows realizing the full potential of the SibER system, including:

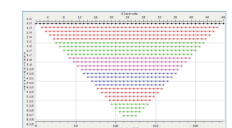
- Creation of measurement templates in 2D electrical resistivity tomography mode;
- Import of complex arrays from third-party template sequencers (ERTLab, ZondResND)
- Implementation of geophysical surveys of wells;
- Vertical electrical soundings mode;
- Measurement of self potential;
- Diagnostics of the operability of the equipment internal components, etc.



поддержка нескольких концентраторов



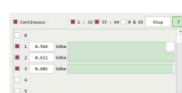
простое построение шаблонов



визуализация квадрупольей



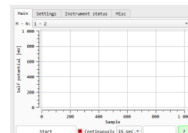
настройки измерения



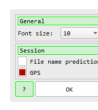
тест электродов



самодиагностика



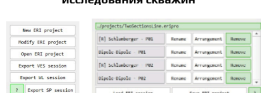
режим измерения собственного потенциала



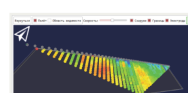
запись GPS координат



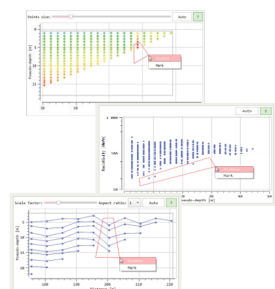
режим геофизического исследования скважин



удобная обработка и экспорт результата



визуализация результата



ручная и автоматизированная фильтрация данных



ELECTROMAGNETIC INDUCTION MULTIFREQUENCY PROFILERS

GEOVIZER

SPECIFICATIONS:

Operating frequencies:	12.5 / 40/111 kHz
Measurement time:	0.3-0.9 sec.
Sensitivity:	1mV
Dimensions:	90x75x25 cm
Battery life:	up to 6 hours
Weight:	4.5 kg
Control program:	Android, Windows

Radial-parametric method of direct field compensation

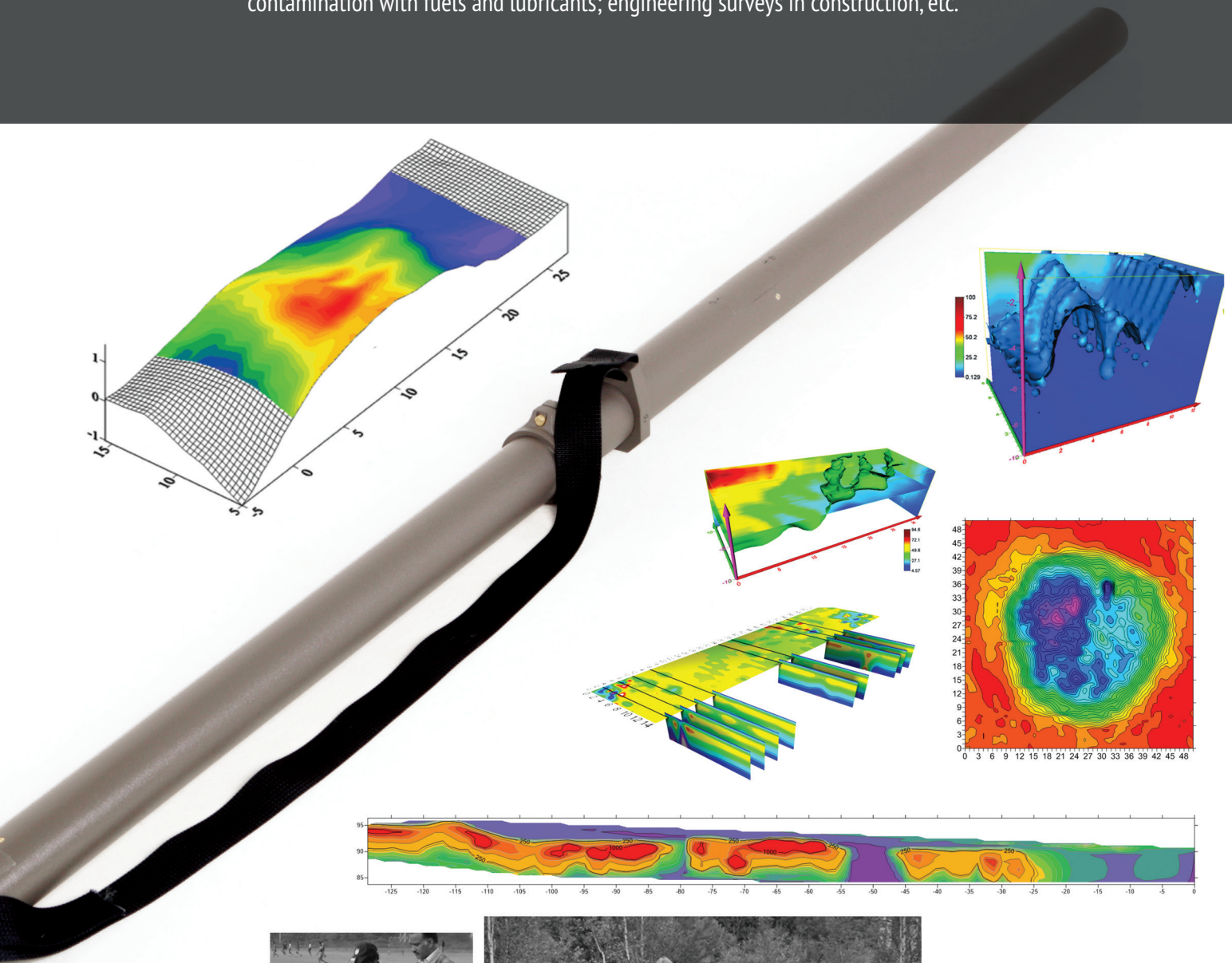
AEMP-14

SPECIFICATIONS:

Frequency response:	2.5-250 kHz
Number of working frequencies:	14
Measurement time:	0.3-2 sec.
Generator power:	up to 90 W
Sensitivity:	1mV
Dimensions:	275x30x10 cm
Battery life:	up to 6 hours
Weight:	9KG
Control program:	Android, Windows



The equipment is used to monitor the condition and determine the location of underground utilities and tunnels; mapping of shallow groundwater and its pollution; research of archaeological sites; assessment of agricultural soil; monitoring and detail diagnostics of contamination with fuels and lubricants; engineering surveys in construction, etc.



APPLICATIONS



MULTI-ANGLE GROUND PENETRATING RADAR (GEORADIOTOMOGRAPH)



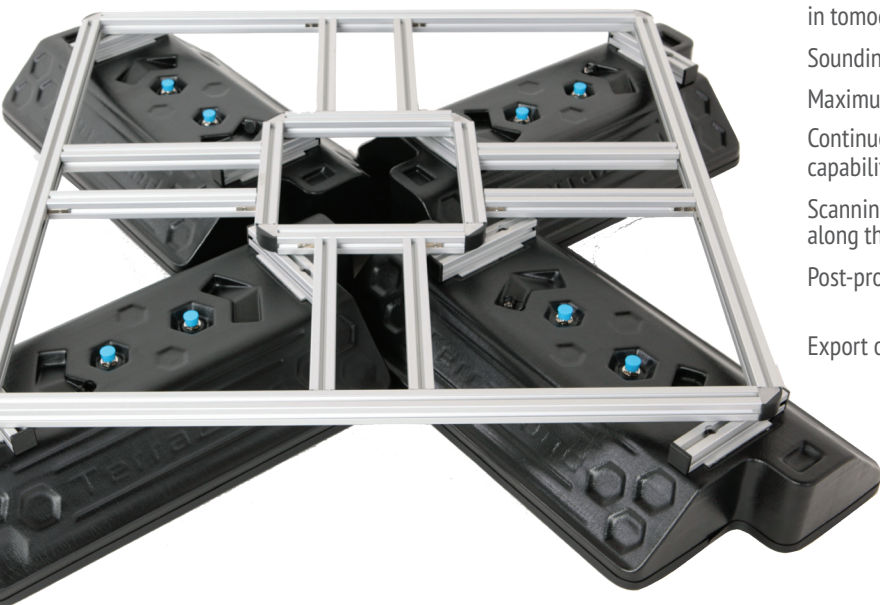
The device is designed for detection and spatial localization of objects and heterogeneities hidden in various environments (soil/ground, pavement, engineering structures, etc.). Objects and heterogeneities having electric permittivity different from the background electric permittivity of the environment can be found.

The main applications of the georadiotomograph: construction sites; diagnostics and monitoring of roads, railways, and airfields; archaeological research; forensics; mapping and monitoring utility lines, etc.



GRT-XX SPECIFICATIONS:

Frequency range:	0.5-3 GHz (GRT-3X) 0.2-1.2 GHz (GRT-1X)
Output power of the syntheser::	up to 50 mW
Antenna type:	combined type of broadband antenna elements array
Number of antennas in line of transceiver modules:	8-16-24-32
Number of measuring points (per trace) in tomography mode:	1024+
Sounding speed:	10'000 traces/s
Maximum sounding depth:	3 m (GRT-3X); 8 m (GRT-1X)
Continuous sounding capability at speed:	130+ km/h
Scanning resolutions along the antenna array:	7.5 cm (GRT-3X); 15 cm (GRT-1X)
Post-processing routines:	automatic/ semi-automatic vectorization
Export of scan results:	ASCII, PNG, TRZ, RDR, NIFTI, SHP, DXF, CAD/BIM



Programmable switching allows using the common midpoint algorithm to calculate the thickness and dielectric constant of the upper contrast layer, such as asphalt or concrete pavement.

For linear or area scans, the equipment can be installed on any vehicle, for example, cars, robotic ground platforms, unmanned aerial vehicles, hand carts, etc.



HARDWARE INSTALLATION EXAMPLES

TERRAZOND-AIR

Lightweight version of the georadiotomograph for installation on UAVs

SPECIFICATIONS:

Maximum sounding depth:	1.5 m
Speed of scanning:	up to 130 km/h
Scanning resolutions along the antenna array:	7.5 cm
Dimensions:	120x45x35 cm
Weight:	4,5 Kg



GRT-81

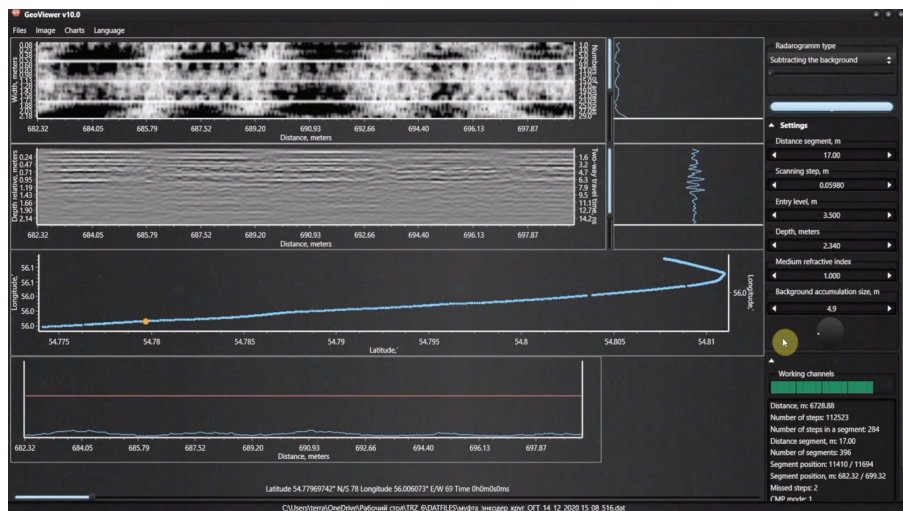
Portable device for finding and visualizing hidden objects behind obstacles

SPECIFICATIONS:

Maximum sounding depth:	0.8 m
Speed of scanning:	up to 5 km/h
Scanning resolutions:	longitudinal - 0.5 cm transverse - 3.5 cm
Visualization mode:	2D/3D
Dimensions:	63x31.5x15.5 cm
Weight:	7 Kg

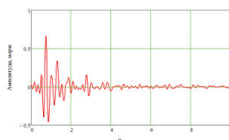
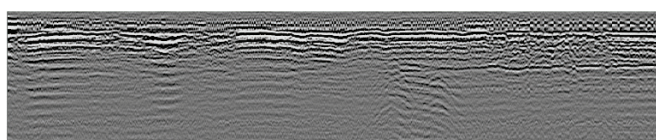


APPLICATION EXAMPLES OF GEORADIOTOMOGRAPH

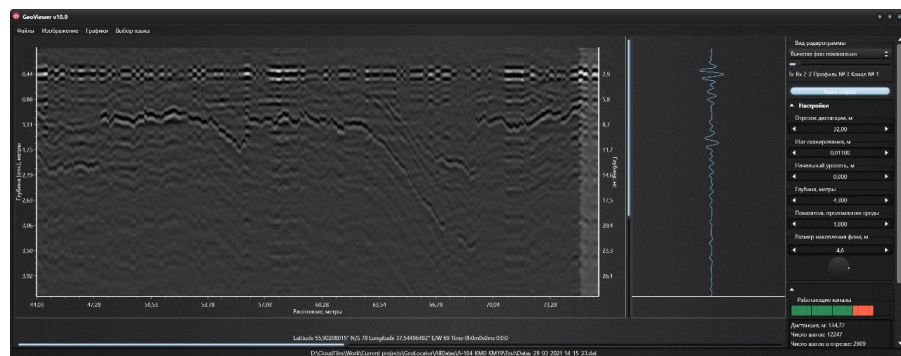
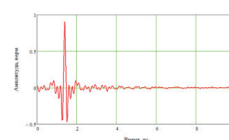
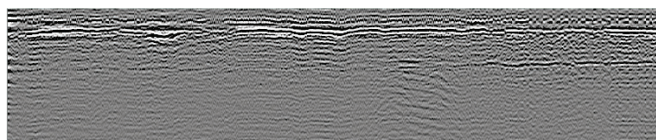


Visualization of the result after scanning along the railroad using the updated version of the GeoLocator 10 and GeoViewer 10 software.

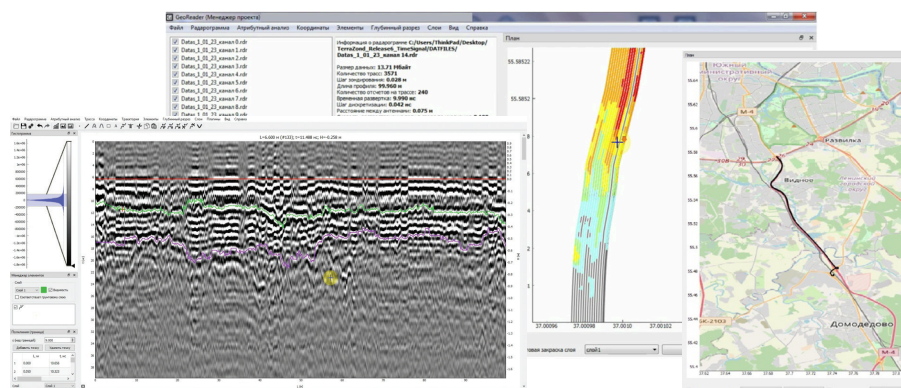
On the amplitude map, the rail-sleeper lattice is clearly visible from above.



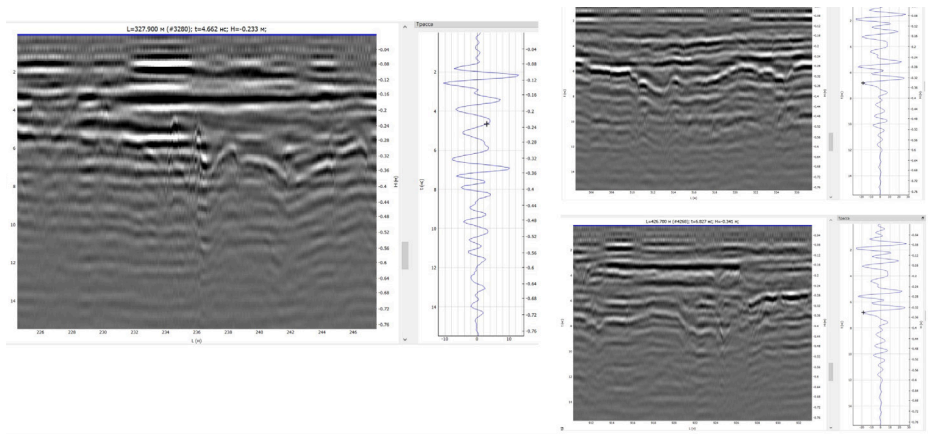
Result before and after HF shaping and calibration procedure.



The result of scanning the roadway using the GRT-33 equipment after applying the calibration.



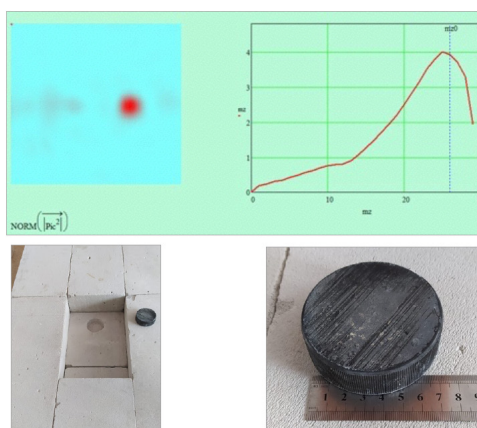
Batch processing of data received by the GRT-22 equipment. The figure shows the result of processing one radarogram in the GeoReader software package (LLC «TIM») (without calibration), as well as displaying the change in the thickness of the asphalt concrete pavement along the scan and along the width of the antenna array.



Presentation of the scan result of the road in the form of a time slice from one of the 23 measurement channels (GRT-33).



An example of amplitude maps visualization (radio image) obtained by scanning archaeological sites with the GRT-22 equipment on an automated crawler platform.



Tests of the lightweight TerraZond-Air georadiotomograph for installation on UAVs. Localization of a low-contrast target with a diameter of 7 cm (plastic washer) in a homogeneous structure (aerated concrete). The thickness of the aerated concrete block is 10 cm, the scanning height above the surface is 70 cm.



GEOPHYSICAL RESEARCH

With extensive experience in geophysical research, using own equipment, our team could solve any problems - complex geophysical survey of the environment using the methods of electrical exploration, seismic prospecting, ground penetrating radar, magnetometry and others.

PROBLEMS

solved by our team of specialists

- Preparation of construction sites - localization of waste, control of the environment state;
- Engineering and geological surveys;
- Archaeological research;
- Search for underground communications;
- Localization of failures of utilities utilities (flooding sites);
- Diagnostics of soil dams;
- Mapping of groundwater and soil pollution;
- Mapping and monitoring of permafrost;
- Geological dissection of the profile;
- Detection of voids;
- Assessment of the fertilizer content in the soil;
- Mapping of the moisture level of agricultural lands;
- Search for water;
- Other work related to geophysical exploration of the environment.







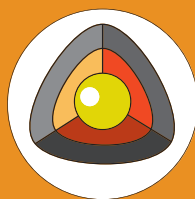
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