SIGNAL GEOFÍSICA LTDA
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Electromagnetic induction compact profiler GEOVIZER

Multipurpose compact profiler GEOVIZER implements the method of induction multi-frequency mapping and enables to resolve the problem of fast and contactless surveying of the Earth. As a result of corresponding studies, it becomes possible to obtain spatial distribution of the level of secondary signal from the medium to a up to 3 m depth. The signal level allows for the evaluation of VES. Local high-contrast variations in the medium (metal objects, cavities, waterings with highly mineralized solution) are particularly trackable. More conductive objects (tunnels, bunkers with wet walls, pipes, etc.) in less conductive ground are also a good target for GEOVIZER.

GEOVIZER allows profiling on any set of 3 fixed frequencies in the range of 12.5 - 111 kHz, including with automatic referencing of the measurement point to global coordinates. The overall dimensions of the device (900 x 750 x 250 mm), weight (5 kg) and ease of operation (through smartphone with OS Android) - all these things significantly facilitate the process of data acquisition, as well as increase the spatial resolution of the survey.

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GEOVIZER preliminary measurement results are visualized in real time on the smartphone screen. Dedicated app allows its users to build a quasi-3D image of signal distribution. The connection with the device is achieved via Bluetooth protocol.

Problems that can be solved with GEOVIZER:

- Hydrogeology
    - Seasonal monitoring of variations dynamics in groundwater properties
    - Ground water search and localization
    - Ground water and contamination mapping
    - Searching for salt and fresh water sources

- Agronomy
    - Assessment of mineral fertilizer concentration
    - Quality and efficiency control of various operations
    - Agricultural land assessment
    - Soil fertility assessment
    - Seasonal monitoring of soil properties dynamics
    - Studies of ground condition, allocation of fracture and watering zones

- Municipal engineering
    - Monitoring of road pavement condition
    - Monitoring of underground utility system condition
    - Search and localization of water leakage sources in underground pipes
    - Location of underground utilities, structures, etc.

- Archaeology
    - Localization of archaeological objects
    - Monitoring of monuments hidden under the ground
    - Detailed research of archaeological objects

- Ecology
    - Agroecology
    - Analysis of technogenic factors influence
    - Ecological inspection
    - Monitoring of potentially hazardous objects
    - Ecological risk management

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- Ecological assessment of soil contamination by fuel and lubrication materials
- Detection and localization of industrial waste burial of any chemical composition

- Land reclamation
  - Monitoring of work efficiency
  - Monitoring of ground waters spreading dynamics

- Security
  - Search for criminal dumps, underminings and tunnels
  - Detection of pipeline taps
  - Location of leakage source and evaluation of volume of oil products leakage from trunk pipelines

Specification:

Frequency range	12.5-111 kHz
Transmitter power	60 W
Receiver sensitivity	1 mV
Scan time at single point at 3 frequencies	0.3 - 0.9 s
Noise level	50 nV
Battery operation time	8 hours
Overall dimensions	900 x 750 x 250 mm
Weight	5 kg
Connectors	2 × CAN FD / RS232 / 12V, USB, external GNSS antenna, Overhauser sensor
Display	160 × 128, OLED
Membrane switch panel	6 buttons
Memory	up to 32 Gb (industrial microSD)
Power	10 ÷ 16.8 V, Li-ion or lead battery 100-240 VAC, optional CAN-Ethernet interface required
Operating temperature	–40 to +60 °C
Li-ion battery	14.6 V, 4 A·h
Dimensions with connectors	Ø73×116 mm – sensor 125×100×35 mm – console

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