

## AEMP-14



Multifrequency complex AEMP-14 is the final version of the three-coil induction system for electromagnetic profiling.

The principle implemented in the instrument allows to measure the distribution of apparent resistivity in the soil at a depth of up to 10 m. Equipment shows the best results in conductive media. Also good targets could be more conductive objects (ex. tunnels, underground shelters with wet walls, pipes, etc.) in less conductive soil.

AEMP-14 allows profiling on any set of 14 fixed frequencies in the range of 2 500 – 250 000 Hz, including automatic referencing of the measurement point to global coordinates.

Ease of operation allows just one person to work with the instrument. AEMP-14 measurement results are visualized in real time on Pocket PC, data and control signals are transmitted via Bluetooth. Upon completing the work, data is downloaded to a PC for further processing and visualization of the result in maps or profile curves. Depending on the number of frequencies used, the survey speed can vary from 2 to 30 km/h (with measurements taken every 2 m on the profile).

### **Problems that can be solved with AEMP-14:**

- 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 buried monuments
    - Detailed research of archaeological objects
  
  - Ecology
    - Agroecology
    - Analysis of technogenic factors influence
    - Ecological inspection
    - Monitoring of potentially hazardous objects
    - Ecological risk management
    - 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
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- 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	2.5-250 kHz (14 frequencies)
Measurement time	0.2-2 s
Transmitter power	90 W
Receiver sensitivity	1 mV
Noise level	50 nV
Battery operation time	12 hours
Overall dimensions (when assembled)	2750 x 300 x 100 mm
Weight	9 kg
Frequency range	2.5-250 kHz (14 frequencies)
Measurement time	0.2-2 s
Transmitter power	90 W
Receiver sensitivity	1 mV







