

Stratagem EH-5

High-Resolution Electrical Conductivity Imaging



The Stratagem EH-5 is our newest magnetotelluric (MT) instrument to measure subsurface conductivity. The MT method is based on the fact that, at a given frequency, the ratio of the of the magnetic field to the electric field (or impedance) is constant for a constant resistivity. Natural signals, most commonly from distant lightning strikes, cause MT currents to flow in the ground. The resulting fields can be measured to determine this ratio.

The sensitivity of the new Stratagem EH-5 is very high. High enough that data acquired in the AMT dead zone is generally of sufficient quality to eliminate the need for an auxiliary transmitter. This simplifies data collection and eliminates the inconvenience and hassle of setting up extra equipment.

The new Stratagem EH-5 hosts modern acquisition software and broadband hardware that further simplifies data collection. This means that the operator no longer has to worry about which band to collect. The new Stratagem EH-5 uses decimation to automatically and simultaneously pick high, mid, and low-frequencies from a single time series.

Depth of imaging depends on the resistivity and the lowest frequency for which there are reliable data, but depths of 500m can be expected and up to 1,000 meters on some sites. After

data collection, the Stratagem can be picked up and moved to a new station, a process requiring 15–20 minutes.

FEATURES & BENEFITS

- **Fully integrated, easy-to-use system** - All hardware and software ready to go out-of-the-box.
- **Rapid setup and data acquisition** – Full sounding to 500 meters and up to 1000 meters, depending on conditions.
- **Real-time, in-field display** – The Stratagem EH-5 is controlled using an Android or Windows device. See, evaluate, and enhance data quality in the field
- **Resistivity mapping from 10 m to 1,000 m in a single setup** – Perfect tool for high-resolution resistivity mapping for minerals and groundwater exploration, engineering and geotechnical site evaluation, academic research.
- **Simple to setup, rapid data acquisition, in-field display of MT parameters** – The best tool for teaching MT and AMT concepts in an academic setting.

SPECIFICATIONS | Stratagem EH-5 High-Resolution Electrical Conductivity Imaging

Operating Principle: AMT, HSAMT. Audio magnetotellurics (AMT) and hybrid-source AMT (HSAMT) are electromagnetic exploration methods using naturally occurring currents flowing in the Earth's subsurface. In the AMT band, these are mostly generated by distant lightning strikes that can be up to several thousand kilometers away from the survey site.

Frequency Range: 1 Hz to 96 kHz.

Number of Channels: five (Ex, Ey, Hx, Hy, Hz)

Electric Sensors: stainless steel stakes.

Magnetic Sensors: Model G100K induction coils with bandwidth of 1 Hz to 100 kHz

ADC: 32-bit high-speed

Temperature Range: -20° C to +85° C

Controller - Data Logger: Ruggedized laptop PC or Android tablet

GPS Synchronization Accuracy: <20 ns

Input Impedance: >20M Ohm

Dynamic Range: 127dB instantaneous

Noise floor: <5 nV/√Hz @ gain 20 (10 Hz - 70 kHz)

Receiver Storage Capacity: 32 GB

Acquisition Gain Settings: E: 1, 10, 20 and H: 1, 2, 5

Sample Rate: 192 kHz, 6 kHz, 75Hz

Receiver Dimensions: L36 cm x W36 cm x H32 cm

Receiver Weight: 5.8 kg

In Field QC: Time series, apparent resistivity, phase values, Bostick resistivity and depth, AC-DC noise levels, spectral amplitudes

Power Consumption: 8 Watts

Optional Remote Reference: Remote module available as option. May also be used as a second sounding station



Specifications subject to change without notice

Stratagem EH-5 (0123)



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