



GEM-3R Multifrequency Electromagnetic Sensor

What's New

The GEM-3R is a cart-mounted GEM-3 with a rectangular transmitter. It is specifically designed for UXO survey by single operator on foot. This new model features a large transmitter (1 m x 0.75 m) for deep penetration, real-time screen display on a PDA, and rugged construction for rough ground conditions. Everything, including electronics and battery, is self-contained on the cart, leaving the operator completely free of external luggage or tangled cables.

The sensor produces inphase and quadrature data at each frequency. Inphase data is sensitive to earth's electrical conductivity and magnetic susceptibility. Over highly conductive or magnetic soil, the inphase data is often too sensitive to motion-induced noise to be a stable detection indicator. The quadrature data, however, are insensitive and, thus, provide reliable detection. The sum of all quadrature data, called the Q-sum, is an excellent detector in conductive or magnetic geology, with minimal false alarms.

Technical Specifications

Bandwidth	30 Hz to 96 KHz
Frequency domain	Single/Combine/Multiple
Selectable sampling rate	30 Hz or 25 Hz
Weight including cart	35 Kg
Transmitter Size	100 cm x 75 cm
Coil Configuration	Coplanar
Maximum TX Movement	65 Am ² at 450 Hz
Rechargeable Battery	12 VDC
Powerline detection	50 Hz or 60 Hz

Output

- > Inphase and quadrature at each frequency—realtime
- > Powerline noise at selected frequency—realtime
- > Data display in color contour—realtime
- > GPS-merged geo-referenced data—realtime
- > Apparent conductivity and magnetic susceptibility



Features

- > Cart-mounted electronics enclosure with easy battery-pack replacement
- > No extra luggage to tote or tangled cables to tend
- > PDA/IPaq™ as the user interface with full WinceGEM functionality
- > External GPS connector with 12V power available
- > Dead-reckoning survey option
- > Bluetooth communication to the PDA and RS232 serial ports to any other external devices
- > Real time “data-painting” of the survey area for quick view and evaluation
- > No need to download data after each survey: data are stored in the internal memory as well as on the SD card.

GEM-3 Multifrequency Electromagnetic Sensor

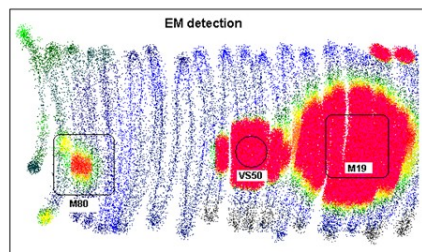
The GEM-3 comes in various sizes and shapes, handheld, pushcart, trailer-towed, or ship-towed. These sensors have been used for a variety of surface and in-situ geophysical surveys including:

- > UXO Surveys
- > Shallow geology
- > Groundwater
- > Geotechnical engineering
- > Soil conductivity & moisture
- > Land mines
- > Archaeology
- > Environmental contaminations
- > Underground facilities
- > Continuous EMI spectrum

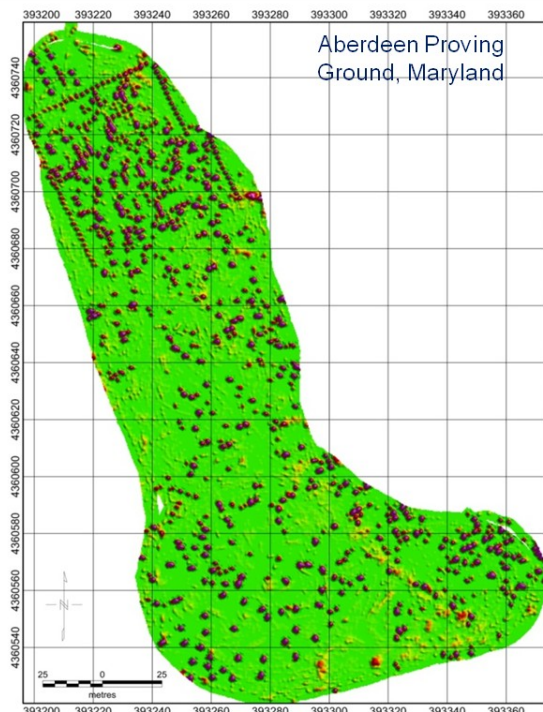
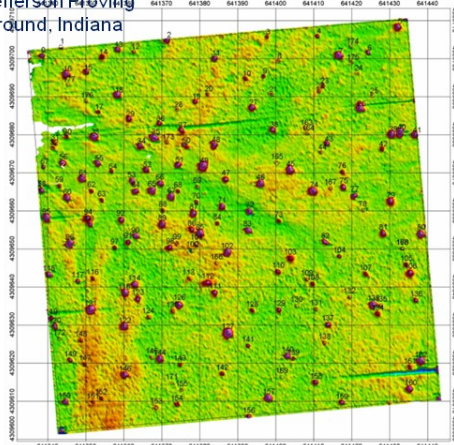


GEM-3 Data Examples

Fort Belvoir, Virginia



Jefferson Proving Ground, Indiana



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