



# Multi-Frequency Electromagnetic Induction Instrument

## Profiler™ EMP-400

[www.geophysical.com](http://www.geophysical.com)

The Profiler™ EMP-400 is GSSI's premier EM conductivity meter. It is designed for high-speed GPS registered reconnaissance of large areas and is the perfect tool for site discovery and delineation. Profiler is very sensitive to changes in ground conditions, making it an ideal tool for prehistoric sites without stone architecture or with ephemeral pit features.

GSSI designed the Profiler to produce data that has rock solid stability. There is no need to spend valuable survey time continuously balancing the instrument or worrying about unacceptable data drift as the temperature changes throughout the day.

### GPS Solutions

Your surveys have to cover a lot of ground and you need to know where those features are, and that means GPS. The Profiler software can now be integrated with the Trimble GeoExplorer XT or XH.

No need to worry about cables or carrying around an extra device. Start the GPS controller on the Trimble and go. The Profiler collection software will do the rest.

### Acquire Data

- User-friendly system
- Unmatched signal stability
- Multi-frequency system

### Deliver Results

- Flexible battery options
- Advanced software features for real-time data results
- Files are stored on internal memory and structured in Excel format
- Easily download data for processing in any gridding software

### Premium Mobility

- Lightweight – weighs under 10 pounds
- Wireless data logger eliminates cable noise
- Integrated GPS



"The GSSI Profiler EMP-400 is a valuable tool that provides our clients with more efficient and comprehensive geophysical surveys. We have been impressed with its simplicity to deploy in the field and the data it outputs to create an easy to understand sub-surface image of our geophysical survey areas."

*Fletcher S. Thompson, E.F. Thompson Geotechnologies, Inc.*

# Electromagnetic Induction Method Explained

EM instruments contain two sets of coils that are located on opposite ends of the tool. One set of coils is used to transmit a primary magnetic field, which generates an electrical current into the ground. The induced current then generates a secondary magnetic field, which is sensed by the coils in the receiver end of the instrument. Data is then displayed on a control unit indicating the conductivity of the earth.

## EM Equipment

The Profiler system is made up of two main components:

- 1 EM instrument; which is comprised of the transmitter (a), receiver (b) and electronics enclosure (c)
- 2 PDA; the instrument interface with integrated GPS



## System Specifications

Coil Spacing	4 ft (1.21 m)
Operational Bandwidth	1 kHz to 16 kHz
Memory	248.5 MB 180,000 continuous data points 360,000 discrete data points
Power	Re-chargeable Lithium Ion battery or 4 (four) AA batteries
Data Transfer	by Microsoft ActiveSync or Device Manager via USB cable
Display	2.2 x 2.9 in (5.58 x 7.36 cm) color screen
Records up to 3 frequencies simultaneously	Measurement values: In-phase: PPM Quadrature: PPM Conductivity: mS/m

## Mechanical

Dimensions	57.5 (l) x 9.5 (w) x 4.9 (h) in (1.46 m x 24 cm x 12.4 cm)
Weight	9.9 lbs (4.5 kg)
Environmental	Water resistant

## System Includes

Profiler™ EMP-400 System with rugged, wireless data logger
20-channel WAAS GPS
Batteries
Battery chargers
Carrying strap and low-carry handle
Rugged transit case
Instruction manual and Utilities CD

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