

SCINTREX

ENVI GEOPHYSICAL SYSTEM

The Scintrex ENVI System gives you the flexibility to find the increasingly more elusive anomalous targets. A complete ENVI system is low cost, lightweight, portable proton precession magnetometer/gradiometer with VLF capabilities which enables you to survey large areas quickly and accurately. Whether it is for Magnetic surveys, VLF electromagnetic surveys or a combination of these techniques, the ENVI system can be designed to suit your own unique requirements. This customized approach gives you the ability to select the following options for your instrument:

- Portable Field and Base Station Magnetometer
- True Simultaneous Gradiometer
- VLF Electromagnetic Receiver
- VLF Resistivity Option

BENEFITS

Customize Your System

At the heart of the ENVI system is a lightweight console with a large screen alphanumeric display and high capacity memory which is common to all configurations. Included with each system are the appropriate sensors, sensor staff and/or backpack, a rechargeable battery, battery charger, an RS-232 cable and a transit case.

Increase Productivity

For magnetic surveys you can select sampling rates of 0.5 second, 1 second and 2 seconds.

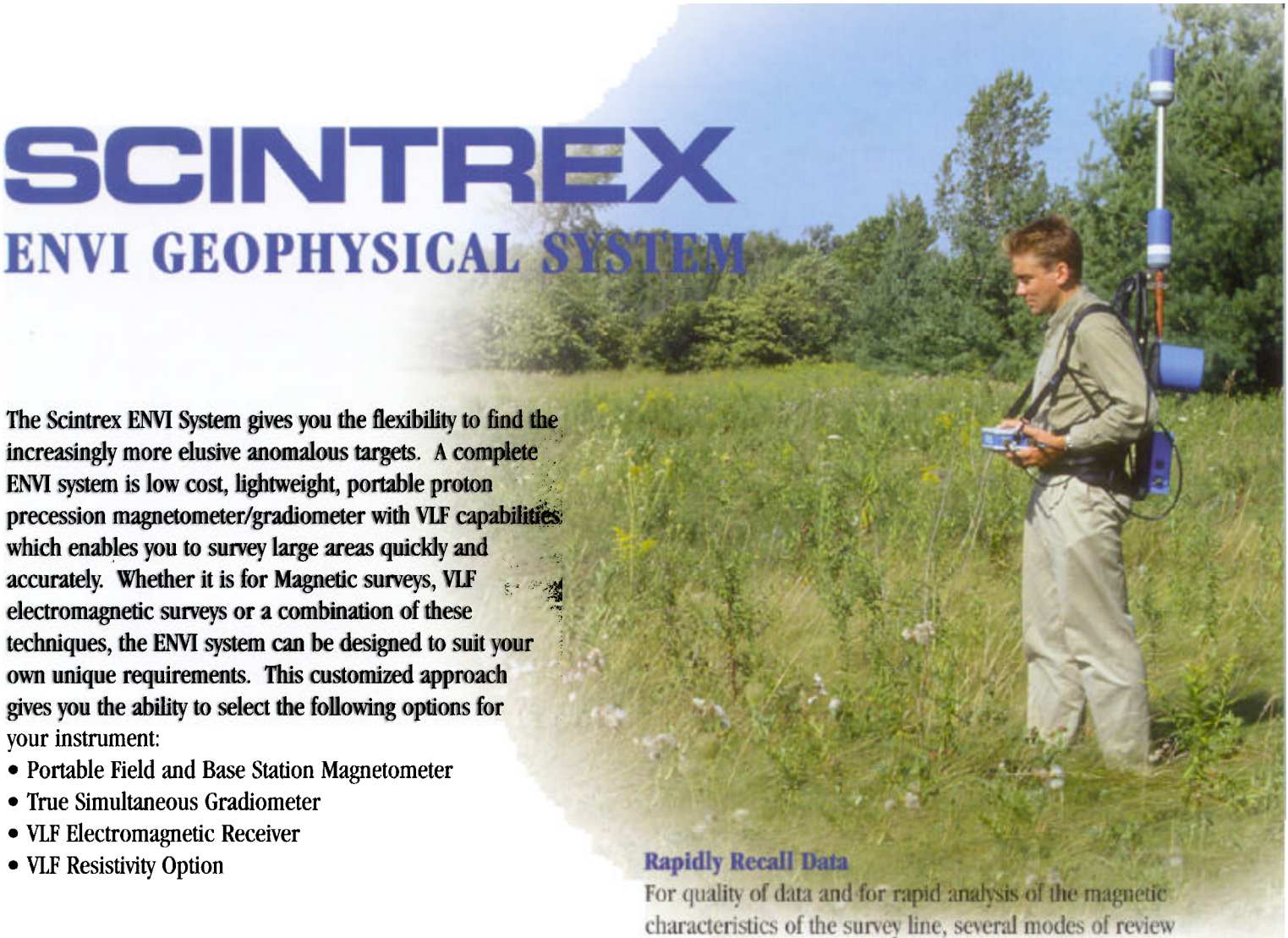
Rapidly Recall Data

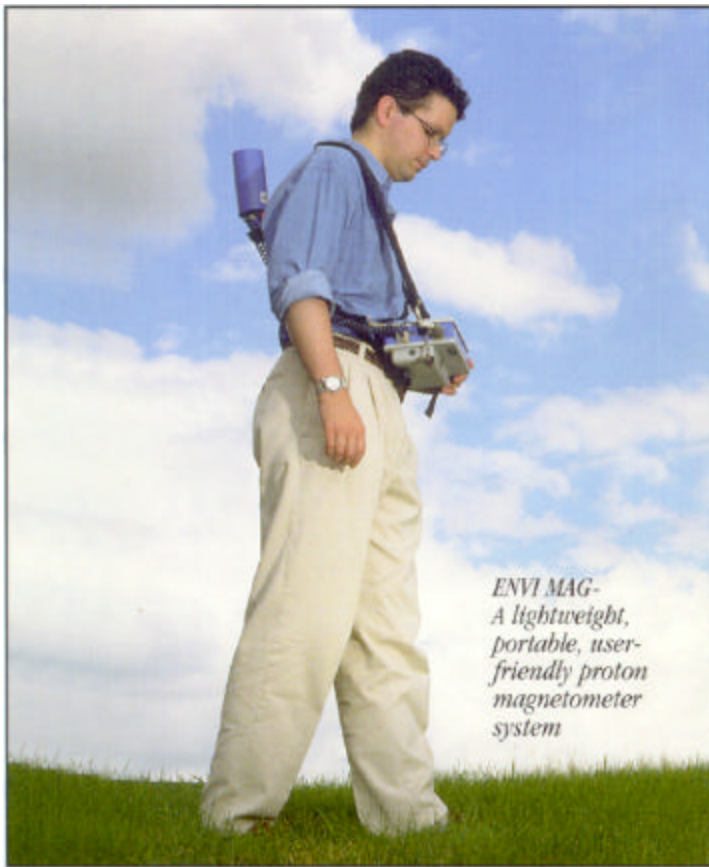
For quality of data and for rapid analysis of the magnetic characteristics of the survey line, several modes of review are possible. These include the measurements at the last four stations, the ability to scroll through any or all previous readings in memory and a graphic display of the previous data as profiles, line by line.

Simplify Fieldwork

The ENVI makes surveys easier to conduct as the system:

- provides simple operator menus
- presents the data both numerically and graphically on the large LCD screen
- eliminates the need to write down field data as it simultaneously stores time, field measurements and grid coordinates
- clears unwanted last readings if selected
- calculates statistical error for each measurement
- automatically calculates the difference between the current reading and the previous one (base station)
- provides the ability to remove the coarse magnetic field value or data from the field data to simplify plotting of the field results
- automatically calculates diurnal corrections
- allows for hands free operation with the backpack sensor option





ENVI MAG

The ENVI system when configured as a total field magnetometer is referred to as the ENVI MAG. In this set up the ENVI system can be operated a traditional stop and measure mode, thus providing the full sensitivity obtainable with a proton magnetometer, ideally suited for mineral exploration. Alternatively the ENVI MAG can be operated in the "WALKMAG" mode, where readings may be made continuously at a user selectable rate of up to 2 readings per second. Although this reduces the accuracy marginally, it does allow the user to collect increased volumes of data and cover more area in a shorter period of time. This is particularly important for large signal near surface targets as typically found in environmental surveys. This makes the ENVI a very cost effective tool for environmental surveys. The ENVI MAG provides the following information:

- Total Magnetic Field
- Time/Date of Reading
- Co-ordinates of Reading
- Statistical Error of the Reading
- Signal Strength and Decay Rate of the Reading

As a magnetic base station instrument the ENVI can be set up to record variations of the earth's magnetic field. Using this information from a stationary ENVI MAG the total field readings obtained with other roving magnetometers can be corrected for these fluctuations thus improving the accuracy of your magnetic data. All ENVI MAG systems can be operated as either field or base station instruments. The optional base station accessories kit is recommended for base station applications.

Saves You Time

Only one instrument is needed for magnetometer, gradiometer, VLF and VLF resistivity surveying. A complete ENVI System can calculate and record 4 VLF magnetic field parameters from 3 different transmitters, a magnetic total field reading and a simultaneous magnetic gradient reading. It can also measure and record 2 VLF electric field parameters from 3 different transmitters with the VLF Resistivity option.

Upgrade Your Unit at any Time

The ENVI is based on a modular design, you can upgrade your system at any time. This built-in flexibility allows you to purchase an ENVI system with only the surveying equipment that you need for now but does not limit you to one application. When your surveying needs grow, so can your ENVI system. Existing users of OMNI systems can also upgrade their consoles.

SYSTEM CONFIGURATIONS

- ENVI MAG
- ENVI GRAD
- ENVI VLF
- ENVI MAG/VLF
- ENVI GRAD/VLF

ENVI GRAD

The ENVI System configured as an ENVI GRAD enables true simultaneous gradiometer measurements to be obtained.

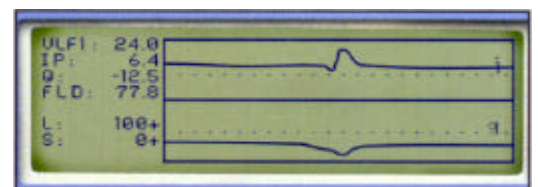
The ENVI GRAD provides you with an accurate means of measuring both the total field and the gradient of the total field. It reads the measurements of both sensors simultaneously to calculate the true gradient measurement.

In the gradient mode, the ENVI sharply defines the magnetic responses determined by total field data. It individually delineates closely spaced anomalies rather than collectively identifying them under one broad magnetic response. The ENVI GRAD is well suited for geotechnical and archaeological surveys where small near surface magnetic targets are the object of the survey. In addition to what the ENVI MAG provides the ENVI GRAD also provides the gradient of the total magnetic field.



Left: Application oriented menus provide the user with the utmost flexibility

Below: Large screen graphics capability allows for rapid data analysis.





ENVI VLF is the ideal groundwater exploration tool.

With the gradiometer option there is no lost survey time as the ENVI enables you to conduct gradient surveys during magnetic storms. The technique of simultaneously measuring the two sensors cancels the effects of diurnal magnetic variations.

ENVI VLF

The ENVI VLF is ideal for environmental, geotechnical and mineral/water exploration application.

The ENVI VLF unit allows you to read the vertical in-phase, vertical quadrature, total field strength, dip angle, primary field direction, apparent resistivity, phase angle, time, grid coordinates, direction of travel along grid lines and natural and cultural features. The ability to obtain data from as many as 3 VLF transmitting stations provides complete coverage of an anomaly regardless of the orientation of the survey grid or of the anomaly itself.

The unique, 3-coil sensor does not require orientation of the VLF sensor head toward the transmitter station. This simplifies VLF field procedures and saves considerable survey time.

The ENVI VLF can measure up to three VLF frequencies. The display indicates the signal to noise ratio which provides you with an immediate indication of how usable a frequency is. The ENVI also enables you to automatically scan the entire VLF spectrum for the most usable stations between 15 kHz to 30 kHz. Using up to three frequencies optimizes conductor coupling even in the most complex geological environments. The ENVI VLF system's ability to obtain repeatable readings from weak signals offers a number of benefits:

- extends the use of VLF to countries where its use was previously marginal
- increases the number of frequencies with which you can operate

VLF Resistivity Option

The ENVI also offers a non-orientation VLF resistivity option.

ENVI MAG/VLF

The ENVI MAG/VLF has the features of both the ENVI MAG and ENVI VLF combined in one instrument.

ENVI GRAD/VLF

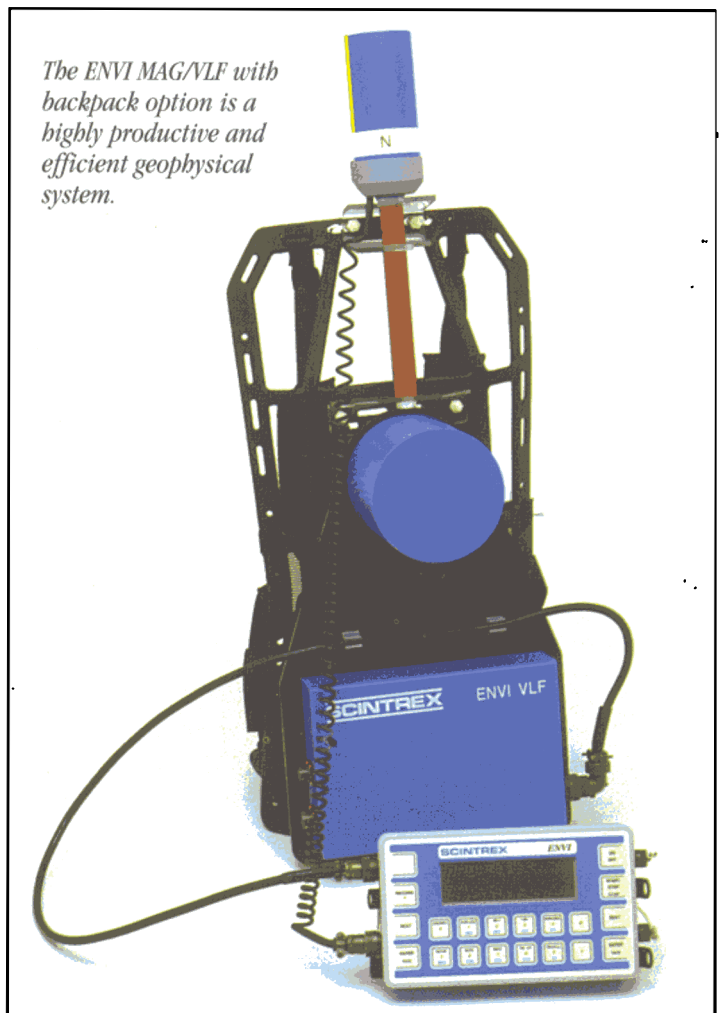
The ENVI GRAD/VLF has the features of both the ENVI GRAD and ENVI VLF combined in one instrument.

ENVI MAP Software

Supplied with the ENVI MAG and ENVI GRAD and custom designed for this purpose, is an easy to use, menu-driven data processing and mapping software for magnetic data called ENVI MAP. The software enables you to:

- read the ENVI MAG/GRAD data and reformat it into a standard, compatible with the ENVI MAP software
- grid the data into a standard grid format
- create a vector file of posted values with line and baseline identification that allows the user to add some title information and build a suitable map surround
- contour the grided data
- autoscale the combined results of the posting/surround step and the contouring step to fit on a standard 8.5 inch wide dot-matrix printer
- rasterize and output the results of the autoscaling to the printer

The ENVI MAP software is fully compatible with Geosoft programs. More advanced data processing, modeling and interpretation software is also available.



The ENVI MAG/VLF with backpack option is a highly productive and efficient geophysical system.

Total Field Operating Range

20,000 to 100,000 nT (gammas)

Total Field Absolute Accuracy:

±1 nT

Sensitivity:

0.1 nT at 2 second sampling rate

Tuning

Fully solid state. Manual or automatic, keyboard selectable

Cycling (Reading) Rates

0.5, 1 or 2 seconds

Gradiometer Option

Includes a second sensor, 1/2m (20 inch) staff extender and processor module.

VLF Option

Includes a VLF sensor and harness assembly

'WALKMAG' Mode

continuous reading, cycling as fast as 0.5 seconds

Digital Display

LCD "Super Twist", 240 x 64 dots graphics, 8 line x 40 characters alphanumeric

Display Heater

Thermostatically controlled, for cold weather operations

Keyboard Input

17 keys, dual function, membrane type

Notebook Function

32 characters, 5 user-defined MACRO's for quick entry

Standard Memory

Total Field Measurements: 28,000 readings

Gradiometer Measurements: 21,000 readings

Base Station Measurements: 151,000 readings

VLF Measurements: 4,500 readings for 3 frequencies

Expanded Memory

Total Field Measurements: 140,000 readings

Gradiometer Measurements: 109,000 readings

Base Station Measurements: 750,000 readings

VLF Measurements: 24,000 readings for 3 frequencies

Real-Time Clock

Records full date, hours, minutes and seconds with 1 second resolution, ±1 second stability over 24 hours

Digital Data Output

RS-232C interface, 600 to 57,600 Baud, 7 or 8 data bits, 1 start, 1 stop bit, no parity format. Selectable carriage return delay (0-999 ms) to accommodate slow peripherals. Handshaking is done by X-on/X-off. High speed Binary Dump. Selectable formats for easy interfacing to commercial software packages.

Analog Output

0-999 mV full scale output voltage with keyboard selectable range of 1, 10, 100, 1000 or 10,000 full scale

Power Supply

Rechargeable 'Camcorder' type, 2.3 Ah, Lead-acid battery

12 Volts at 0.65 Amp for magnetometer, 1.2 Amp for gradiometer

External 12 Volt input for base station operations

Optional external battery pouch for cold weather operations

Battery Charger

110 Volt-230 Volt, 50/60 Hz

Operating Temperature Range

Standard: -40° to 60°C

Dimensions & WeightConsole: 250mm x 152mm x 55mm (10" x 6" x 2.25")
2.45 kg (5.4 lbs) with rechargeable batteryMagnetic Sensor: 70mm x 175mm (2.75"d x 7")
1 kg (2.2 lbs)Gradiometer Sensor: 70mm x 675mm (2.75"d x 26.5")
(with staff extender) 1.15 kg (2.5 lbs)Sensor Staff: 25mm x 2m (1"d x 76")
.8 kg (1.75 lbs)VLF Sensor Head: 140mm x 130mm (5.5"d x 5.1")
.9 kg (2 lbs)VLF Sensor: 280mm x 190mm x 75mm (11" x 7.5" x 3")
1.7 kg (3.7 lbs)**Options**

Base Station Accessories Kit

GPS

Software Packages

Training Programs

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