



*ElectroMagnetic Imaging Technology Pty Ltd
Australia*

*Geophysical Technology Development for
Mineral Exploration, Groundwater and the Environment*

Custom applications developed

SMARTem V Advanced Geophysical Receiver System

- Rapid acquisition, analysis and display of TEM, IP, resistivity, CSAMT and other geophysics data
- Eight programmable channels including amplifier, 8 pole linear phase low-pass filter, and 16 bit A/D converter
- Time or frequency domain processing
- Very low noise data acquisition
- SMART digital signal processing – superior rejection of power line, spheric, VLF and telluric interference
- Sample at up to 1 MHz
- Fully PC-compatible with integrated graphic spectrum analyzer and oscilloscope functionality
- Windows 98 operating system
- Compatible with Zonge, Geonics, Iris and other transmitter systems
- Crystal-synchronized or direct transmitter trigger capabilities
- Automated and manual crystal synchronization function
- Automated functions for acquisition of 3-component borehole TEM data from Geonics BH43-3D probe
- Low power consumption, long-life internal nickel metal hydride batteries
- Power saving features
- Internal calibration of each channel and automated measurement of sensor resistance if required
- Optionally record stacked and/or raw time series
- Large hard disk for storage of several days of raw time series
- Writes processed data into standard ASCII file formats
- All settings saved to disk for recall
- Unique data processing capabilities – filters, transforms, reprocessing
- Display of profiles, decays, spectra, pseudo-sections



This geophysical receiver system was designed with the user in mind. It is powerfully functional, lightweight, has an informative graphic interface, behaves like a PC and results in the best possible quality of data. Whether its EM, IP, CSAMT or something else you're doing, this 8-channel system is the answer.

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SPECIFICATIONS

PC functionality

- 486 DX2-66 CPU & 16 MBytes RAM
- QWERTY membrane keypad
- VGA LCD screen 640x480 pixels
- Internal 3 GByte HDD
- External 1.44/120 MByte FDD
- Printer and serial ports
- External keyboard and video ports

Front-End Electronics

- 8 channel
- Programmable bandwidth 8 pole linear phase, low-pass, anti-alias filter
- Internal gain programmable 1-800
- Power down of channels not used
- Self-calibrating
- Measurement of sensor resistance
- 10Mohm input impedance

Environmental/Power

- Rugged aluminum case
- Dimensions 18" x 13" x 6" (457mm x 330mm x 152mm)
- Weight approx 12 kg (depending on battery configuration)
- Operating temperature -20°C to +50°C
- Internal nickel metal hydride battery pack with built-in intelligent charger
- Auxiliary power from ext. 12-24V battery
- Sealed against dust/moisture

Timing/Synchronization

- Transmitter frequencies from 0.001 Hz to 10,000 Hz
- Continuous sampling rate up to 100 kHz, interleaved sampling at up to 1 MHz
- Oven-controlled 10 MHz crystal oscillators in receiver and transmitter controller
- Independent supply of power to oscillator with computer off

Software

- Rapid automated gain setting
- User-selectable sampling rate/bandwidth
- Digital storage oscilloscope and spectrum analyzer functions
- User-setting of data acquisition parameters, including signal processing functions to improve signal-to-noise ratio
- Automated communication with 3-component borehole EM probe systems
- Display of survey results in profile or station formats
- Routines to reprocess and analyze data
- Transform to B field from dB/dt
- Mimic any other receivers' functionality
- Specialized functions written on request

