



## 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



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

- Custom applications developed
- 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

## SPECIFICATIONS

### PC functionality

- Intel Celeron 500 MHz CPU and 128 MB RAM
- QWERTY membrane keypad
- VGA LCD screen 640x480 pixels
- Internal 40 GByte Hard Disk
- Printer, USB 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
- 10 Mohm 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

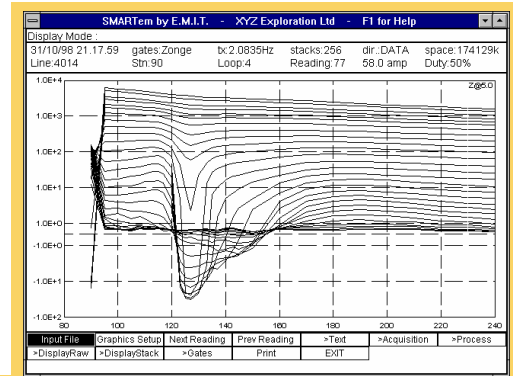
- Transmitter frequencies from 0.001 Hz to 10,000 Hz
- Continuous sampling rate up to 100 kHz, interleaved sampling at up to 1 MHz
- Oven-controlled 10 MHz crystal oscillators in receiver and transmitter controller
- Independent supply of power to oscillator with computer off

### Software

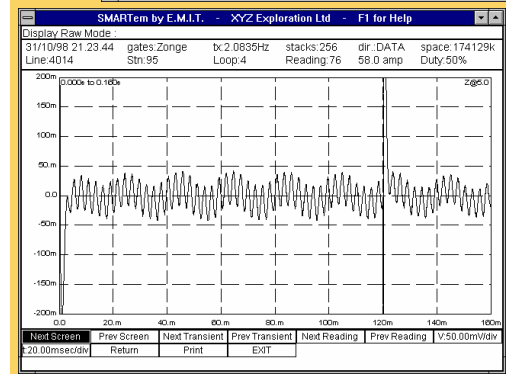
- Rapid automated gain setting
- User-selectable sampling rate/bandwidth
- Digital storage oscilloscope and spectrum analyzer functions
- User-setting of data acquisition parameters, including signal processing functions to improve signal-to-noise ratio
- Automated communication with 3-component borehole 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

## Some displays from the SMARTem receiver

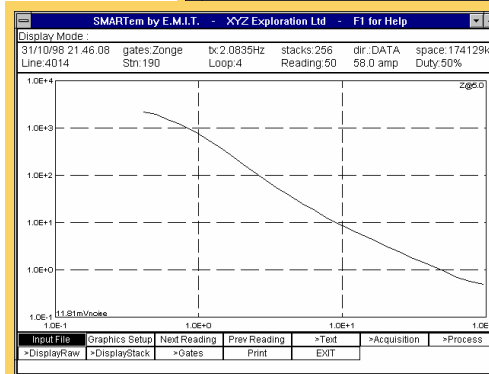
Data Profile



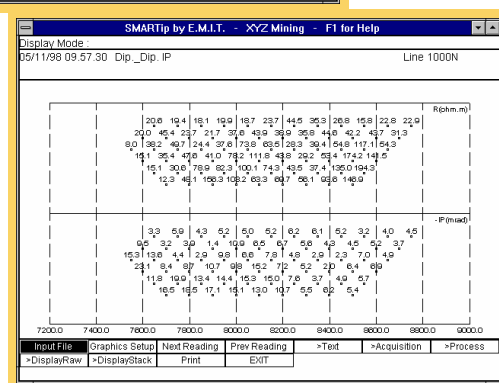
Oscilloscope



Decay



Pseudosection



Phase vs Frequency

