Geoelectronic Instrument
RMT5 PLUS Switch-98

Resistivity Imaging For

- **Groundwater resource investigation**
- **Enviromental application**
- **Mapping and monitoring of contaminated ground groundwater**
- **Geotechnical pre-investigation**
- **Geological mapping**
- **Mapping/prospecting of natural resources**
- **City geophysical exploration**
- **Nonmetal mineral resources survey**

General Specification

- Weather proof
- Shock resistant fiber-glass case
- Operating temperature: -40 to +70 °C
- Dimensions RMT5: 33 x 22 x 16 cm

Weight: 6.5 kg
- Dimensions Switch Box: 27 x 26 x 15 cm

Weight: 4.2 kg
- Power supply: two internal rechargeable 12V, 7 Ah battery ; optional external 12 V

backup car battery for transmitter power
- Autonomy with internal battery:

Five thousands of readings
- Weight of a 98 take-out string on a reel: 20 kg each (for 1 m spacing)

Technical Specifications

Transmitter:

Power:	up to 500 Watts
Current:	up to 2.0 Amps
Voltage:	50-600 V (1200 Vp-p)
Precision (theoretical):	150 nA
Accuracy:	0.1 %
Frequency range:	0.25 , 0.5 , 1,5 , 8 , 18 , 37 , 137 , 174 (Hz)
Output pulse:	full Square

Receiver:

Input impedance:	20 Mohms
Dynamic Averaging :	24 bit A/D conversion
Frequency filtering:	50 or 60 Hz
Precision (theoretical):	150 nV
Accuracy:	0.1 %

Automatic SP compensation including linear drift

Specific Technological Properties

- Connectable to PC and Mobile set for transfer acquisition data using WiFi
- Multifrequency operating from 10s-270 Hz
- Non limited for Data Acquisition
- The ability to acquire data anywhere from any profile
- Switching matrix : 98 divided line into cable
- Array types Default : Multiple Gradient, Dipole-Dipole, Pole-Dipole, Wenner etc.

RMT5 PLUS Switch-98   is a new all-in-one multimode resistivity imaging system. It features an internal switching board for 98 electrodes and an internal 500W power source. Two strings of cable with 98 electrode take-out each are connected to switching box on the back of the resistivity meter. These strings are available with standard 1 m electrode spacing. Customized cables may also assembled for special arrays or non-standard applications.

Compact, easy-to-use and field proof, the **RMT5 PLUS Switch-98** measures both resistivity and self potential (SP). It is ideal for environmental and civil engineering applications such as pollution monitoring and mapping, salinity control, depth-to-rock determination and weathered bedrock mapping. It can also be used for shallow groundwater exploration (depth and thickness of aquifers).

With the **RMT5 PLUS Switch-98** resistivity surveys can be performed very efficiently with one operator only. The well-known reliability and accuracy of the **RMT5** range of resistivity meters will also mean extra value both for the on tractor and the results end-user.
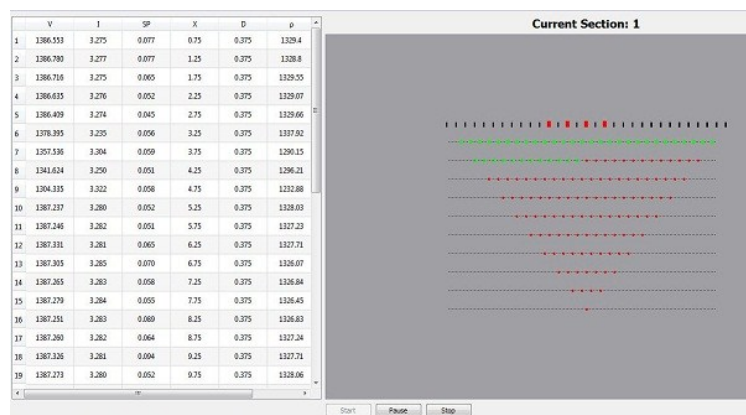
The software of RMT5 PLUS Switch-98 System is sampling

Resistivity Imaging

• Aim: imaging the underground geological structures through surface electrical measurements

• Principle: transmitting a current I through two electrodes and

measuring a voltage V with two other electrodes

• Apparent resistivity: ρ = K*V/I, K depending on the electrode separation

• Resistivity pseudo-section: contoured plot of the apparent resistivity data, using the electrode distance as a pseudo-depth parameter

• True resistivity section: contoured plot of the resistivity distribution obtained through the inversion of the measured data (using a non linear parameter fitting scheme)

• Applications: environmental studies, groundwater investigation, civil engineering, archaeology...
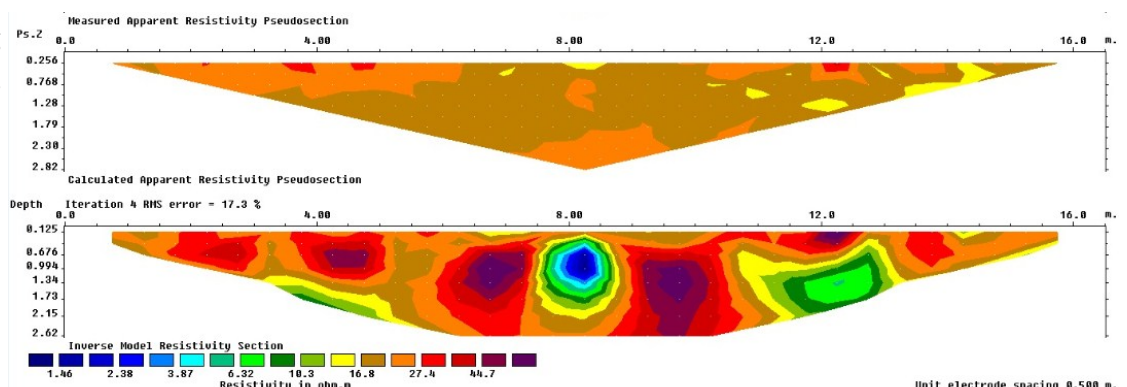
Resistivity interpretation (2D Pseudo-section & section of true resistivity) of pollution plume

2D & 3D Imaging for detection and investigation of pollution plume, geological structure & Soil Moisture at the filed Scale
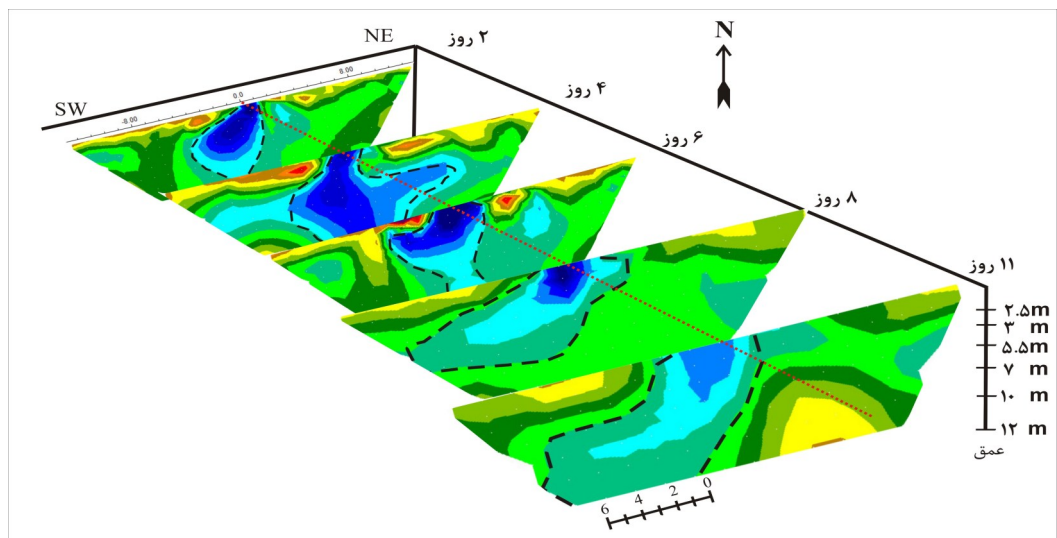

Data sampling for 2D imaging

a=1m
a=2m
a=4m
a=6m
a=7m
a=8m
a=9m
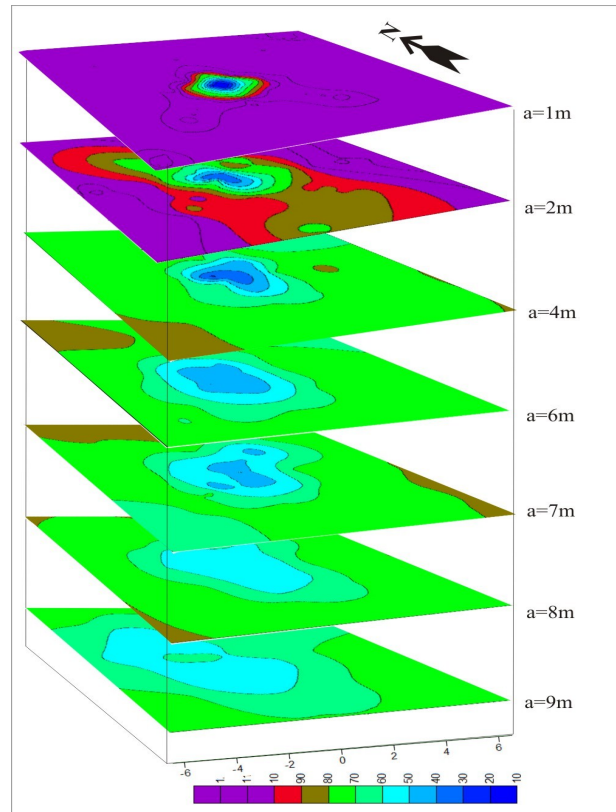
Time-Lapse ERT of pollution plume in unsaturated zone (Top View)

Data Interpretation Software

• RES2DINV, IPI2 Win & Surfer, for pseudo-section inversion to true resistivity (and IP) 2D section

• RES3DINV (PC), for inversion to true resistivity (and IP) 3D data

Gridded position for 3D imaging

Time-Lapse ERT of pollution plume in unsaturated zone (Side View)