www.geomatrix.co.uk
sales@geomatrix.co.uk
Tel: 01525 383438

Elrec Terra Data Sheet

The Elrec Terra is the new improved 20ch Induced Polarisation (IP) and resistivity receiver, designed with a new color touch screen to display the IP decay curves alongside the resistivity pseudosections in detail. With this modern re-design the user can easily navigate through the system menus and mark/ type many of the survey parameters without solely using the touch pad. A compact and robust receiver which can be used in a wide variety of field environments, as it has a large temperature range between -20°C to 60°C; with its 20 channels and 24bit converter (31 bits of dynamic range (at 100Hz) the system can measure very small IP signals. Whilst measuring IP and Res data, the unit records fullwaveform 20ch voltage timeseries data in the background which can later be post-processed in Full wave viewer (free to use software). The acquired data is stored with one sample every 10ms (full decay curve). In terms of position, the Elrec Terra has an internal GPS and automatic handle of local and global coordinates, which helps the user to spatially visualize the data on google earth.

Similar to the Syscal systems, the Elrec Terra is available in standard or switch mode (48 to 120 electrodes) and the standard Electre pro can be used together with a number of switch terra systems for a larger configuration (e.g. Connect two Electre terra switch in master-slave mode to > n.o electrodes 48ch becomes a 96ch system) increasing the system scalability (Fig. 1). If required, the system has a built-in test function which with the provided test equipment, can be used to check the system whilst in the field, allowing more efficient use. Any datafiles can be downloaded onto a USB drive or via WIFI connection to a smartphone or tablet, if shipping the unit, the LI batteries can be removed for ease of transport.

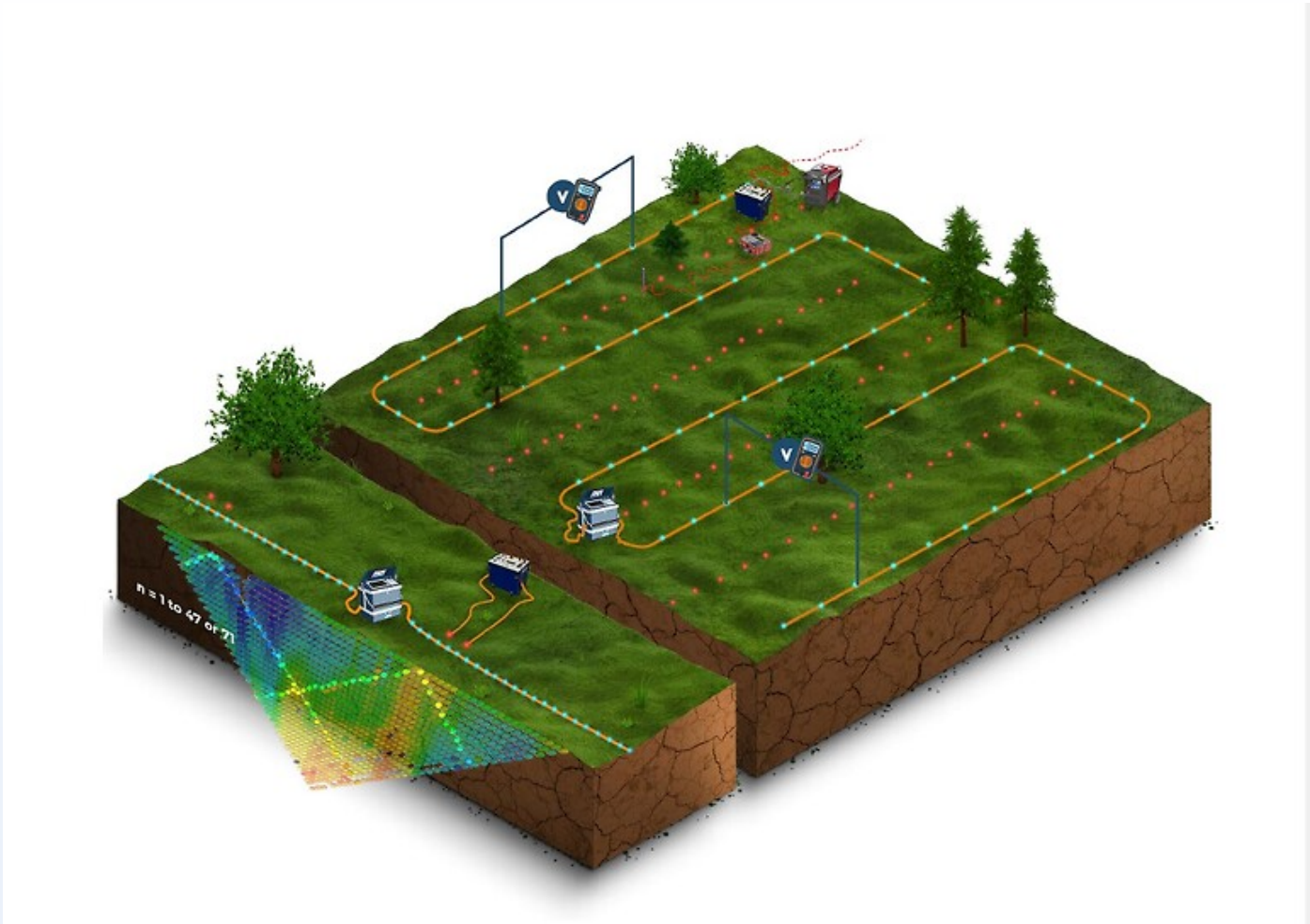


Fig. 1. 2D and 3d array capability - Image shows from left to right the different arrays of the system 2D (increase survey depth from electrode 1 to 48 whilst keeping resolution) to 3D (connect 48 to 16000 electrodes combing injection and reception dipoles in all

Geomatrix Earth Science Limited, Unit 20 Eden Way, Pages Industrial Park, Leighton Buzzard, Bedfordshire, LU7 4TZ

www.geomatrix.co.uk
sales@geomatrix.co.uk
Tel: 01525 383438

directions). To increase productivity set up reception cables and focus on transmitting electrodes.

The system has a one-time acquisition mode when used together with the TIP6000 transmitter which reduces the measurement time by a factor of two and doubling > the IP signal strength. By reducing the time the user can enhance the data quality and improve productivity. As standard, during the current 50% duty cycle the IP is normally measured in the off time period but this technology utilises measuring the IP in the on time period (100% duty current cycle) dividing the total measurement time by two and multiplying the electric potential by two, the TIP (6kW or 12kW) is the only system which allows good current stability of the injected current, enabling this type of measurement.

www.geomatrix.co.uk
sales@geomatrix.co.uk
Tel: 01525 383438

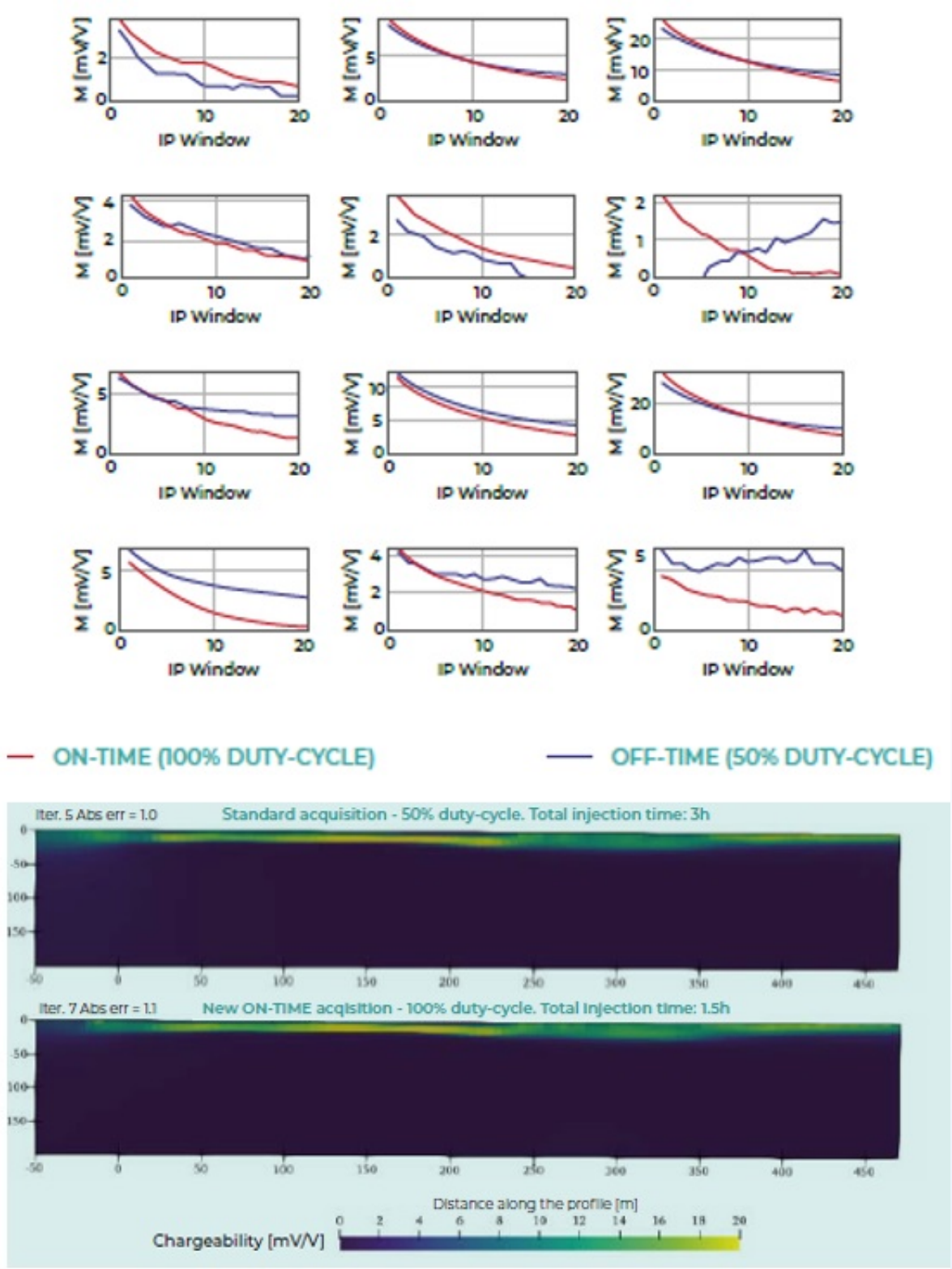


Fig 2. The upper image shows the IP Curve comparison between he 50% duty cycle and the 50% duty cycle. The lower image is a comparison of data acquired over a shorter time period with greater IP/ data quality (100% duty cycle) and over the standard acquisition parameters (50% duty cycle) rate.

www.geomatrix.co.uk
sales@geomatrix.co.uk
Tel: 01525 383438

Product Dimensions

Physical	Dimensions (L x W x H)	Weight
(instrument only)	35 cm x 25 cm x 23 cm	7 kg

Technical Specifications

GPS:	Internal GPS for a simplified management of the global UTM coordinates
Memory:	2GB + USB ports for external memory (1 Tb)
Temperature Range:	-20°C to +60°C
Sequence:	Imported (PC) via Electre Pro or created directly in the Syscal
Fullwave Mode Recording and processing:	Record 100 Hz fullwave form timeseries of voltage in background while measuring, and record up to 1 kHz (possibility). Perform advance processing on fullwave viewer to increase data processing accuracy.
Master-Slave Mode:	Connected to another Elrec Terra switch, behaves like a switch Terra to make a system up to 192 electrodes from 96 electrodes
Mode Diagnostic:	Testing accessories provided and internal software allows the user to test the board and switches.
Rx Firmware Update:	User can update the firmware by oneself once the new version is available
Batteries:	Removeable Li batteries (2 x 96 Wh) , possibility to plug in an external lead battery which is automatically recognised.
Data Downloading:	USB or via WIFI connection from a Web browser
Quality Control:	Quality factor on resistivity and chargeability and storage of a stacked semi-period with 1 sample every 10ms (even when not recording the timeseries)
Compatibility:	Compatible with switch Pro (10ch only)
Pseudo-section display and N.o channels:	Real time display on demand; 20ch galvanically isolated
AD converter/ Dynamic Range & Input Impedance:	24 bits/ 31 bits ; 100M Ohms
Max Voltage:	15V on channel 1 & 15 V on the sum of channel 2 to 20
Input Protection:	1000V
Gain, Resolution and Accuracy:	Automatic Gain Input Voltage, 1 micro V and 0.2% accuracy
Induced polarisation windows:	20 windows with possibility to export the decay curve at 1 sample every 10ms

Geomatrix Earth Science Limited, Unit 20 Eden Way, Pages Industrial Park, Leighton Buzzard, Bedfordshire, LU7 4TZ

www.geomatrix.co.uk
sales@geomatrix.co.uk
Tel: 01525 383438

Induced polarisation measurment mode:	100% or 50% duty-cycle

Geomatrix Earth Science Limited, Unit 20 Eden Way, Pages Industrial Park, Leighton Buzzard, Bedfordshire, LU7 4TZ