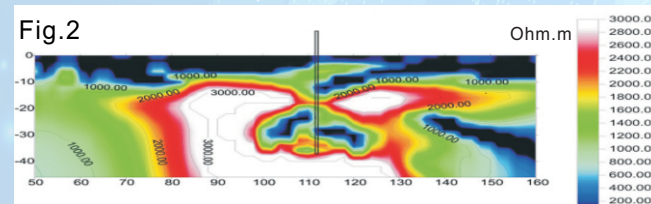
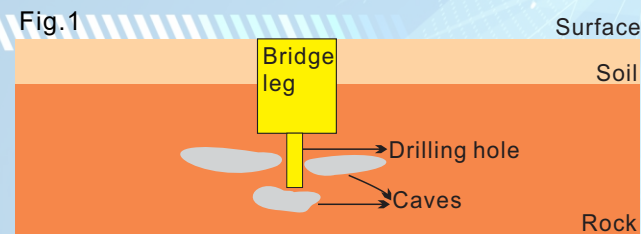


Case Studies:

• 1. Surface-borehole survey

As figure 1 shows, this surface-borehole survey was configured to accurately find caves for structural purposes. The operator easily collected 60k data points within an hour due to our full-channel technology, allowing the collection of voltage readings for every combination of current electrodes.

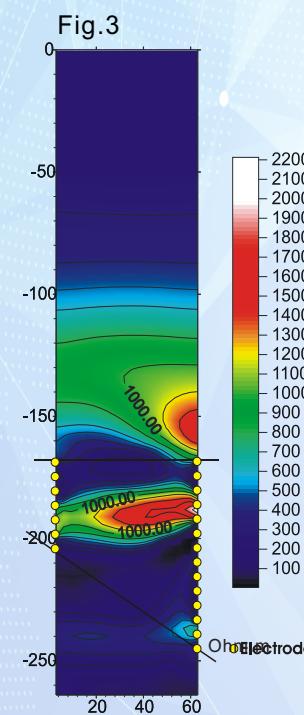
Indicated in Figure 2 is the inversion image obtained from the data set. There is a low resistivity anomaly on each side of the borehole; two caves were found after drilling holes on both sides of the borehole.



• 2. Cross hole survey

As figure 3 depicts, this cross-hole survey was configured to find aquifer zones. Only 7 and 14 electrodes were used in the left and right borehole respectively due to site limitations. With a special data acquisition arrangement, 2,500 data points were collected within 10 minutes.

The inversion result indicates alternating layers of conductive and resistive rock at approximately 190 metres, a resistive layer (red) decreasing in thickness from right to left is interpreted as a shale layer. Immediately below this is a conductor, interpreted as porous sandstone. Follow-up borehole logging agreed with the inversion result.



Third Generation of Full Channel Resistivity/IP System U128

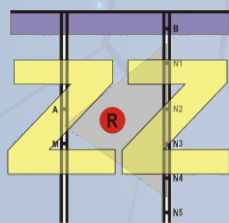


ZZ-UNIVERSAL128

- More affordable: only \$3k for U128-MN
- More power: 500W
- Higher AB voltage: 450V
- Any configurations: you mention
- Any survey methods: you mention
- 5 different electrode versions with **easy upgrade**
U128-MN, U128-32, U128-64, U128-96, U128-128

Manufacturer:

ZZ Resistivity Imaging Pty Ltd 3/239 Magill Rd, Maylands, Adelaide, SA 5069, Australia
Email: sales@zzgeo.com / Phone: +61-8-7123 3509 / Website: www.zzgeo.com



ZZ Resistivity Imaging Pty. Ltd, Australia

www.zzgeo.com

Applications:

- Archaeological exploration
- Dam safety inspections
- Fault mapping
- Groundwater resource exploration
- Mineralisation exploration
- Underground fracture detection
- Bridge/tunnel base exploration
- Engineering exploration
- Geothermal exploration
- Lithological structures
- Pollution mapping
- Void detection

Specifications:

• **General**

Measurement variables Resistivity, IP and SP
 SP compensation Automatic cancellation
 Resistivity cycle times From 0.1S to 10S
 Data storage Unlimited
 Data transmission USB
 Power supply External 12V battery
 Operating temperature -20 to +70°C
 Operating humidity 98% RH
 Weight 9 kg
 Dimension 339 x 295 x 152mm
 Built-in GPS Optional

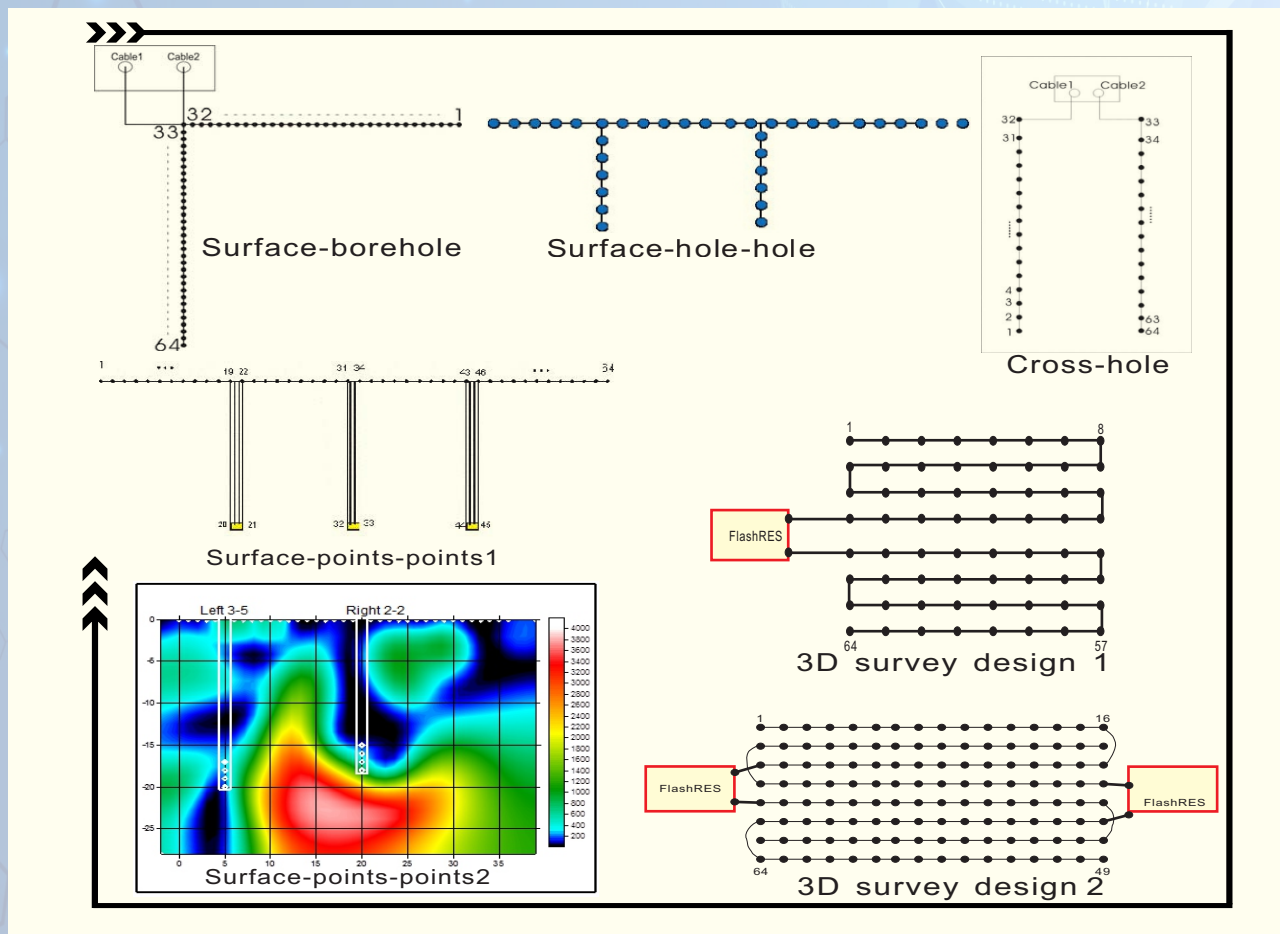
• **Transmitter**

Output power 500W
 Output current Up to 3A
 Accuracy Better than 0.2%
 AB Voltage option From 50 to 450V (up to 900Vp-p)

• **Receiver**

No. of Electrodes up to 128
 No. of Channels up to 128
 Accuracy Within 0.1%
 MN voltage rang +-10V
 Input impedance > 10⁷ Ohm.m
 Input voltage protection 450V
 ADC resolution 24 bits
 Noise suppression Better than 100 dB

FlashRES-UNIVERSAL's flexible configurations:



Features and benefits:

► Features	► Benefits
1. Full channel data-acquisition system.	Most resistivity instruments have only 4, 8 or up to 10 channels. ZZ-UNIVERSAL128 instruments have up to 128 channels and can collect 128 MN voltage data simultaneously for any AB current injection. Such user can collect 112k ABMN data with 128 electrodes in less than one hour.
2. From the collected full channel data, client can recalculate MN voltage between any two electrodes.	Such the data collection is based AB pairs, not MN pairs any more. For example, if there is 10 MN pair related to one common AB, then we only need to collect one AB data and recalculate 10 MN data afterwards and form 10 ABMN data.
5. Ability to combine all specified acquisition arrays (including user defined own array) together and collect data in a single run.	
7. 2.5D resistivity inversion software.	This produces superior resistivity inversion imaging than 2D inversion software.
8. Displays full wave-form current and all voltage data on screen.	<p>Demo our software through our website!</p> <p>www.zzgeo.com</p>
9. 5 different versions with easy upgrade: U128-MN, U128-32, U128-64, U128-96, U128-128	U128-MN: 4 electrodes, U128-32: 32 electrodes, ..., U128-128: 128 electrodes. Client can buy a lower version now and upgrade to high version easily.